fueloil & oil heat

NOVEMBER 1960

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Pilot Jobs help Florida Dealers

Grow ✻ to really live

Equipment Sales build fueloil Gallonage

Oil Heat is ✻ best for Schools

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COUNTER

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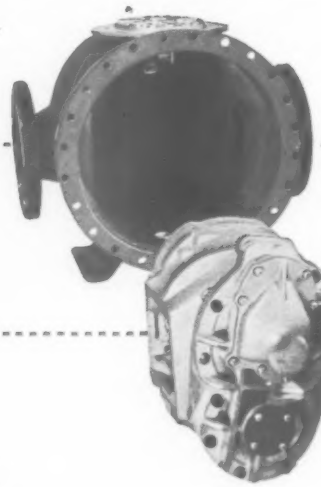
NON-SLIP ADJUSTOR

with **Positive drive** provides simple dry adjustment to increments of 1/20 of 1%, while meter is under pressure — without loss of liquid.



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all welded **steel** housing provides maximum **strength** and rigidity with minimum weight — absorbs normal line shocks, pressures, and piping strain without affecting metering accuracy.

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quickly and easily removed or replaced without disturbing existing line connections.

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"CHURCH OF THE PRESIDENTS"

Connecticut Ave. & N Street, Washington, D.C.

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4—Clean—Quiet—Very High Efficiency.
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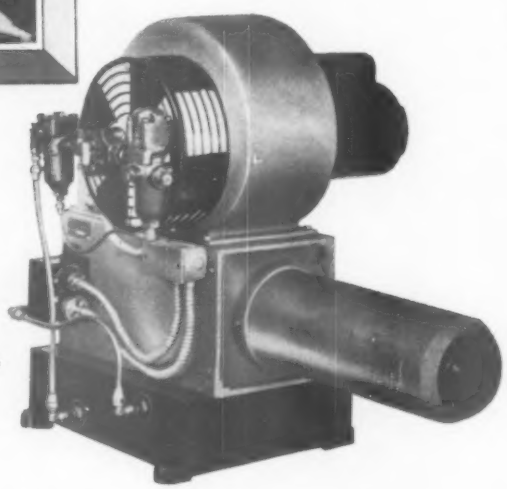
7—No Transfer Pump Required on Normal Jobs.
8—Approved for #5 and #4 Oil by U.L. and Other Authorities.



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fueloil & oilheat

Publication and Editorial Office:
2 West 45th St.,
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NOVEMBER 1960

VOLUME 19 *NUMBER 11*

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ROBERT GRAY, *Editor*
Bert Dunphy, *Managing Editor* — John W. Schulz, *Technical Editor*
V. M. Douglas, *Western Editor* — Margaret Mantho, *Assistant Editor*
George F. Farrell, *Circulation Director*
A. G. WINKLER, *Advertising Director*
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Ruth Wertheimer, *Advertising Production Manager*

Larry Alles, *Midwest Manager*
Room 200, 224 S. Michigan Ave. — *Chicago 4, Ill. Phone: Wabash 2-9548*
Pacific Coast Representative: Don Harway
1709 West 8th St., Los Angeles 17, Cal. Phone: Hubbard 3-5141

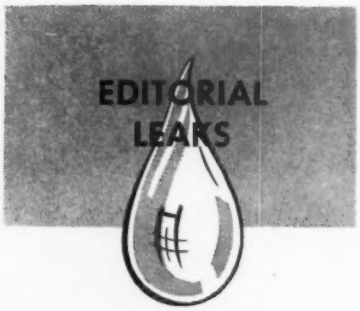
Among other things . . .

In Florida a group of fueloil-oilheating dealers has had considerable experience with installations of the Arkla oil-fired heating and cooling unit. The first feature—beginning on page 47—contains a report of how they have fared with this much talked about year-round unit.

Cover photo: Reggie Moffat, L. A. Johnson Fuel Oil Co., Orlando, Fla., examines the Arkla unit which heats and cools the company headquarters.

More on oilheating equipment is contained in the story, "You must grow to really live." (Begins on page 64.) The theme developed is the completely logical one that fueloil dealers can sell equipment profitably and use the activity to build fueloil gallonage.

And, on page 62, Fred Burroughs begins an interesting discussion of the possibility of fueloil dealers being excellent outlets for the sale of petro-chemical products.



AS WE GO to press there is every indication that the research subcommittee of the Fuel Oil Committee of API will get its money from the parent organization to do a real job on oilheating equipment research. This cannot be absolutely final until after the November board meeting of API in Chicago, but the budget group in the board and other executives have given their approval for a start of $350,000.

This is a very real step forward and when considered in combination with the laboratory assignments undertaken by several major oil companies we are going to have a lot of extra talent aimed directly at our problems.

And speaking of research, quite a significant idea was introduced at Atlantic City this past month by the Minnesota Mining and Manufacturing Co., St. Paul.

We've heard a lot about the coming fuel cell which creates electricity from heat generated by any one of many fuel sources . . . at present the experiments use hydrogen gas. This 3M idea is a thermoelectric generator of a similar nature, but it creates electricity out of the heat already existing for another purpose. They have in mind a small generating unit placed in a boiler which will convert heat into electricity with enough energy to run the oilburner motor, transformer and probably the circulator.

This will work better on boilers than on furnaces because of the longer heat storage. You can see that such a device would make the oil boiler independent of outside electricity if it were interrupted by a storm.

To start the burner before there is heat in the boiler, a storage battery would be used which in turn would be recharged by the generator.

The whole idea is in the laboratory stage. It has been proven that it will work, but so far the cost would be about as much as the boiler itself. Yet it is something to consider in the field of future development because there is going to be quite a bit done with fuel cells in one form or another and this is one approach for our industry.

A NEW INCOME TAX problem has shown up in quite a few spots very recently. The Internal Revenue people seem to be winning their cases, so for the moment it is important for the fueloil distributor to protect himself in whatever way is legal.

This has to do with the income from burner service contracts. A lot of companies, probably most of them, have taken the service contracts at any time of the year and as a matter of fair dealing have set up cash reserves to be amortized monthly through the contract year. The tax people have recently taken the position that the full income from these contracts must be allocated to the calendar year or fiscal year in which the cash is received.

For example, if a dealer got $20 for a service contract in November he is now required to accept the full amount as income in that same year. The internal revenue viewpoint is that the dealer has full control over how this is going to be spent and hence it is his money.

Obviously, one way to get around this is to renew all service contracts in January and then if some money is left next December it would be realistic income for tax purposes.

This has been tested in three cases to our knowledge and the tax people won each time. It seems decidedly unsound and unreasonable, but we have to live with it until someone beats it in the court.

Another income tax angle that is beginning to plague our industry is the question of non-profit status of local trade associations or promotional groups. In the cities with cooperative advertising campaigns, they usually have corporations set up just for this purpose and in the past they have been considered non-profit.

Now it seems that if in the advertising there is a listing of the member companies supporting the campaign, this promotional group can no longer be considered a non-profit organization. Instead it is taxed as profit on whatever funds are left over at the end of the year.

Again, this could be avoided by having none left over, but that might make for difficult administration. It would be simpler to avoid listing in public print the names of contributing dealers.

From the right hand drawer . . .

• Speaking at the ESPA convention in New York, Wm. F. Kenny, Jr., president of Meenan Oil Co., told the group that his company has converted 168 gas heating jobs to oil in less than two months this fall in the builder development at Levittown, N. J.

This followed a two year test on nine homes, first gas then oil, and showed savings from $106 to $176 a season. The equipment used was an Iron Fireman induced draft burner fitted into the existing table-top boilers. There are 3,517 homes in the development, all originally gas heated.

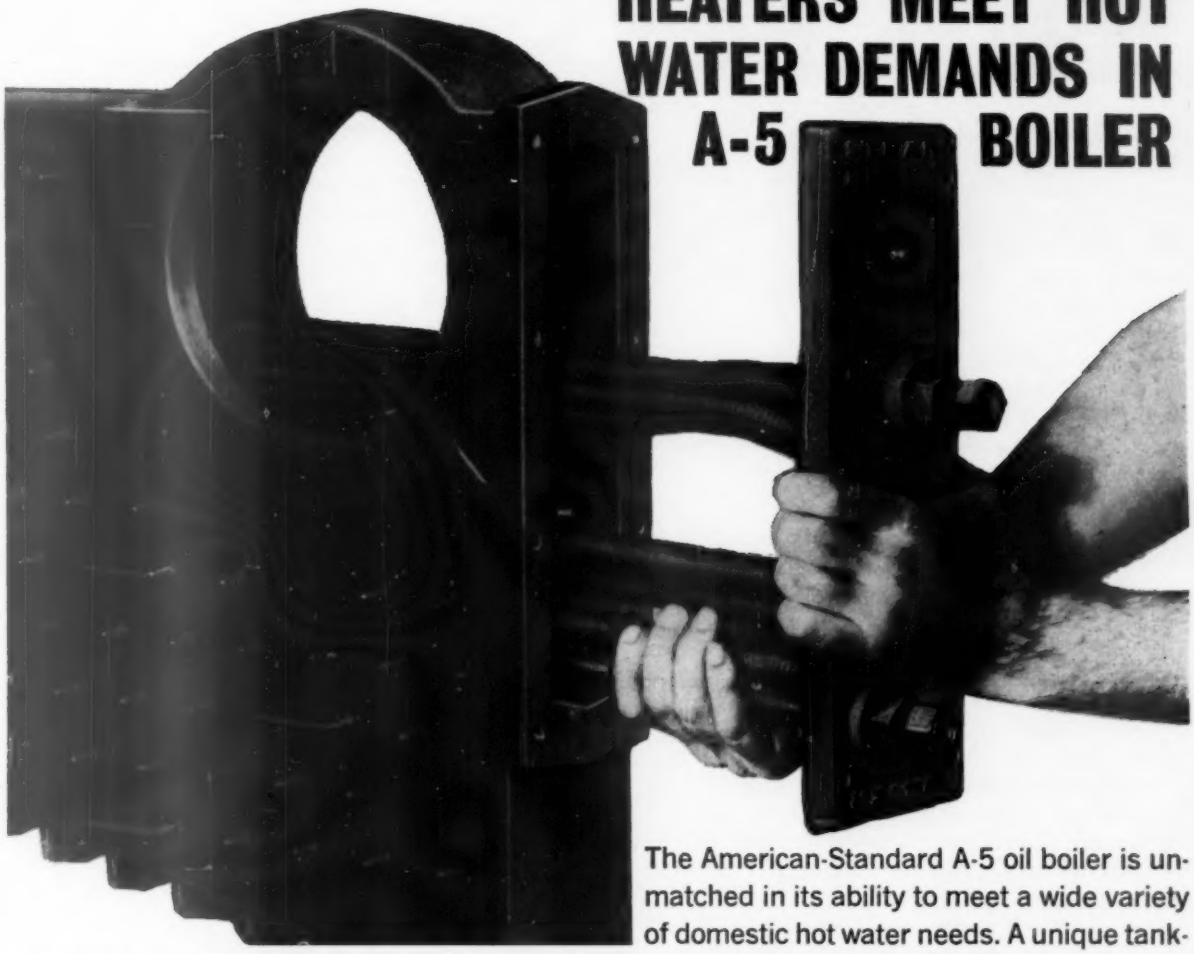
• Khrushchev has gone home without winning much of anything, but he did give us a point. He took a dim view of the black smoke pouring from the stacks of Con Edison's East River plant and said that in Russia they have gotten away from this by putting in gas burners in many areas. Should we attempt the parallel . . . "birds of a feather?"

• When Bob Barr became sales manager of Jet-Heet, Inc., after leaving OHI of Long Island last year, he announced that dealers would be established within a 100 mile radius of the plant in New Jersey. Obviously underestimating his talents, he has actually planted a group of dealers in every state from Maine to Florida.

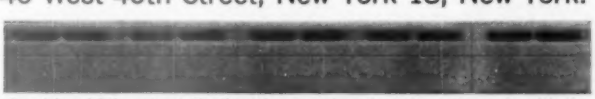
• Lennox Industries suggests that Americans adopt the oriental custom of removing shoes when going indoors and thus eliminate the main cause of dirt in the home. An engineering study of furnace filters found this to be the primary source of deposits on the filter elements.

EXCLUSIVE FEATURE:

MULTIPLE TANKLESS HEATERS MEET HOT WATER DEMANDS IN A-5 BOILER



The American-Standard A-5 oil boiler is unmatched in its ability to meet a wide variety of domestic hot water needs. A unique tankless water heater arrangement allows you to match expanding domestic hot water requirements (from 4 to 16 gpm) by inserting extra tankless water heaters into boiler sections. Your bids stay low because there is no necessity to install a bigger boiler, with unneeded heating capacity, or separate water heating equipment. For quick installation, an optional prefabricated copper manifold connects multiple water heaters in parallel. ■ The A-5 is ideal for large homes, small-to-medium apartments and commercial buildings. It features: vertical-flue sections that are extra-compact for easy handling and fast assembly . . . wet-base construction, making special base unnecessary . . . net I-B-R ratings from 195,800 to 622,700 Btu/hr . . . two 4″ supplies for front or back hookup . . . pre-cast combustion chamber. ■ For details, see your American-Standard distributor, or write to AMERICAN-STANDARD, PLUMBING AND HEATING DIVISION, 40 West 40th Street, New York 18, New York.



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PLUMBING AND HEATING DIVISION

GOVERNMENT INFLUENCE ON FUELS

by James M. Collins

WASHINGTON—Federal Power Commission has issued its long-awaited policy to deal with independent producers' gas prices—completely junking the utility approach. It did so in issuing its decision in the landmark Phillips Case. In conjunction with that decision, it issued a new policy for "area-pricing" of natural gas—produced by independents only, and not including gas produced by pipelines. The new area prices contain two "ceilings" for each of the principal producing areas—one for new contracts, and the other, somewhat lower, for rate increases in old contracts. The prices are based, in large part, on the standards that were contained in the 1956 Harris Gas Bill and represent competitive pricing between producers and pipelines.

All observers agree that this is a big step forward, which promises to help get gas prices more in line with oil prices, but it is certain to be contested in court by consumer elements. At least it will bring some stability to gas pricing in producing areas. But, since it will have to run the gamut of court tests, it is a poor substitute for clear-cut legislation, which is the real aim of the gas producers.

New Bill Is Studied

The 'harmony" group of producers —made up of representatives from IPAA, API, AGA, and Mid-Continent Oil & Gas Association—met again in New York Oct. 7 in another attempt to put together a gas bill—but made little progress. One reason was that the new FPC area-pricing policy has caused confusion. Distributors are believed to feel that the new FPC policy might work; the pipeliners might go along with it—if it were extended to their gas production. But, the independent producers still want action from Congress. This divergency of views, plus the uncertainty as to who will occupy the White House next January, makes any prediction about gas legislation very risky now. But, certainly Nixon would be in favor of a bill.

Import Changes Proposed

Meantime, the Interior Department, has proposed revamping import controls on residual fueloil, in order to give quotas to 'newcomers,' who have deepwater tanker terminals along the East Coast but who did not import, in their own name, in the base period, 1957. Their quotas would be based on a percentage of their terminal input in the year ending Sept. 30, 1960. The companies presently holding quotas (based on their 1957 imports) would have a choice of using their 1957 base, less 15%, or of computing their quotas on residual inputs at their terminals, whichever was higher. Net effect, it is believed, would be to grant quotas to some 12 "newcomers." And, about 5 current importers would probably switch to a terminal-input basis, since this would give them a much larger quota than they now have—particularly Gulf Oil Corp. who has challenged the method for allocating residual imports in court. If the new plan is put into effect for the first quarter of 1961, Gulf may drop its court suit since the new Interior proposal recognizes "sales" positions of residual marketers with deepwater terminals.

Crude Changes Considered

Interior Department is also considering revising the whole basis for figuring the level of crude-unfinished imports, East of the Rockies (Districts 1-4). Objective would be to redress the ratio between crude imports and domestic crude production in Districts 1-4, so that each would grow at about the same rate, in meeting product demands in the area. Crude imports have increased substantially since 1957, but domestic crude production in Districts 1-4 was actually less during the first half of this year than in 1957. The reason for this is the large increase in production of natural gas liquids (produced with gas) and increases in imports from Canada and in product shipments from the West Coast and Puerto Rico to Districts 1-4. All of the 11% increase in oil product demand during the past 3 years has come from the non-crude sources, and from crude imports.

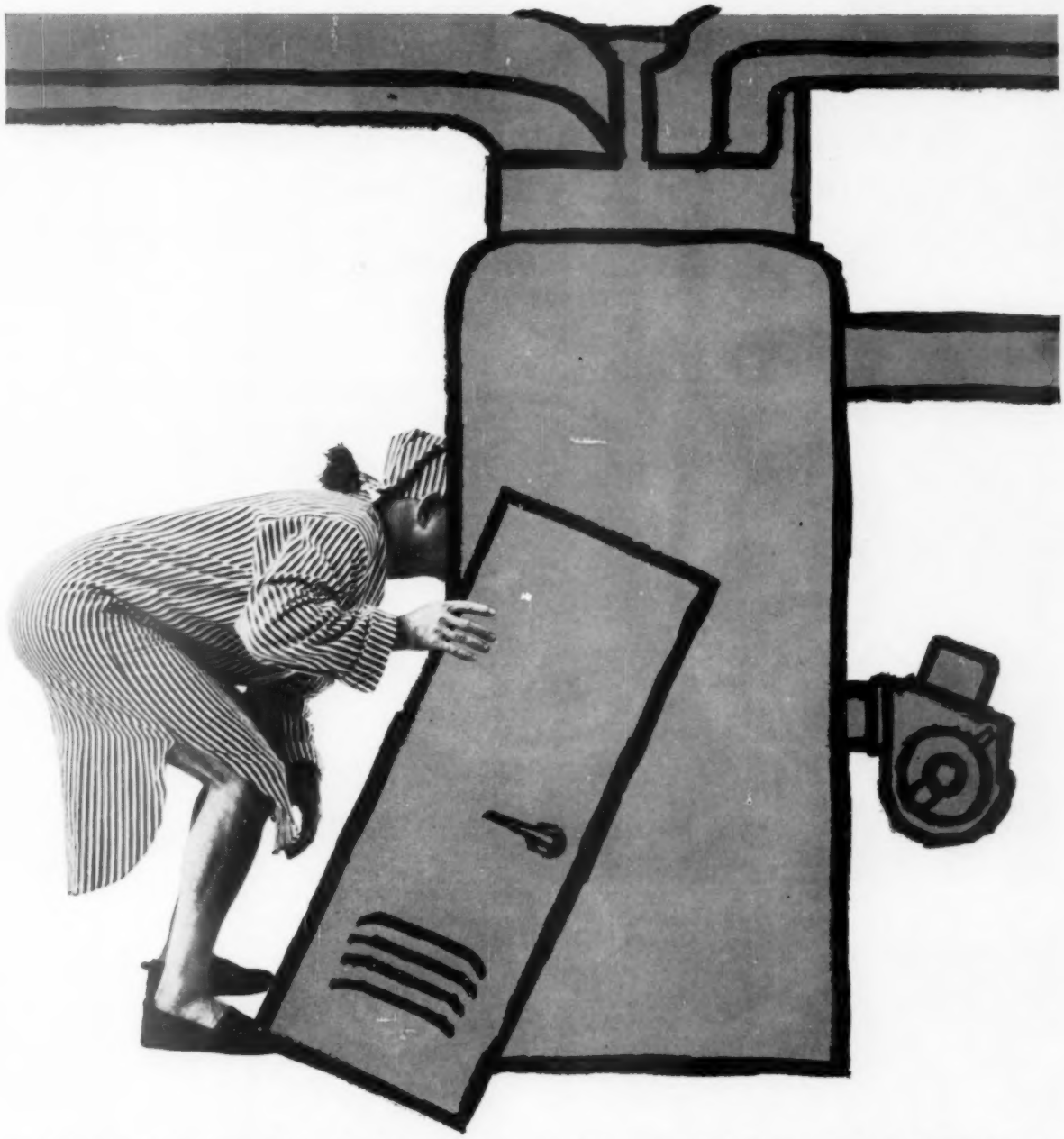
Politics and Oil

Future developments in the entire energy picture will undoubtedly be significantly affected by whether Senator Kennedy or Vice-President Nixon wins the election in November.

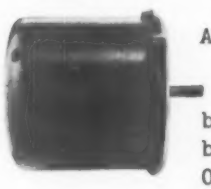
Each candidate has now stated where he stands, for example, on the oil depletion allowance. In addition, Nixon has said he strongly favors enactment of a bill in Congress to eliminate utility control of independent gas producers' prices. Kennedy has not yet said just where he stands on this issue —but he has voted against such legislation in the past and probably still opposes any serious relaxation of producers' gas prices.

On highway financing—supported now by federal and state taxes on gasoline to a large extent—both candidates have been very wary of committing themselves. Both want to see what the Commerce Department reports to Congress, early in 1961, on the costs of highways and the benefits to the various segments of the economy. But, a further increase in the gasoline tax—or at least maintenance of the present 1-cent "temporary" increase, due to expire next June 30—is almost certain to be one of the recommendations of the next President, whether he is Nixon or Kennedy. And, such a move, if successful in Congress, would have a further serious effect on all petroleum economics and products. Both candidates want to keep the highway program going at full tilt and gasoline taxation is the easiest method to finance the road-building program.

On oil imports, neither candidate has yet clearly stated his position on whether present federal controls should continue, or not. However, Kennedy has virtually assured the coal industry that he backs control of residual imports, and it would not be surprising if Nixon comes out for some further reduction in imports of crude oil, in order to benefit Texas, especially.



"ARE YOU SURE IT'S ON? I CAN'T HEAR THE MOTOR."



As we have said, the new Delco oil burner motor is a very, very quiet motor. It's totally enclosed. Less sound gets out, less dirt gets in. All switch parts are plated or made of quiet-working nylon. Too, new Permawick® lubricant cuts wear in half, yet quadruples load capacity. Degree of dynamic balance is within new, closer limits. Concentricity of rotor O. D. to shaft O. D. is held to new, closer tolerances. Weight: only 13½ pounds. Costs you less to handle, less to ship. More details: Just write or call your nearest Delco Products Sales Office.

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New, quiet blower motors, too! Ask about them.

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says F. J. Schuster, Exec. V.P., Troy Oil Co., Inc., Indianapolis, Ind.

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"Our ads in 6 out-of-area Yellow Pages directories bring in at least 6 new customers a week!"

"The ENTERPRISE phone number in these ads lets prospects call us collect. This really pays off!"

"We attract local Indianapolis business with Yellow Pages ads under 5 headings."

"Our Yellow Pages listings under 3 trade-marks also attract many customers for brands!"

Display this emblem. It builds your business!

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MERCHANDISING NEWS

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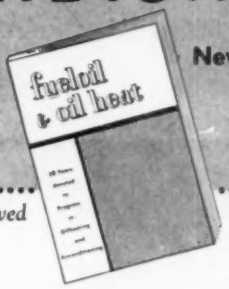

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Monthly oilheating Trends

SEPTEMBER was the first month this year to reflect the large drop in oilheating installations that were shown earlier by the decline in factory shipments. It has been a very unorthodox market with monthly installations as shown by dealer reports and permits reflecting only a modest decline, perhaps on a solid core, while dealers used up inventories and bought less from factories.

Now that we come to the normal peak season, the peak is not showing up. This will tend to bring installations and factory shipments comparisons closer together than they have been running as the fall season progresses. Certainly "the pipelines" are pretty empty, meaning the stocks at all levels from burner manufacturer to heating unit manufacturer to jobber to dealer.

The September installations were approximately 47,473 compared with 66,868 last year. These were divided: New homes, 8,450; replacements of old oilheating 20,223 and conversions from other fuels, 18,800.

For the nine months, they were 392,853 or 10% below last year's 438,334. By types we find: New homes, 119,524 this year vs. 140,576; replacements, 146,881 as against 152,689; conversions from other fuels, 126,448 compared with 145,069.

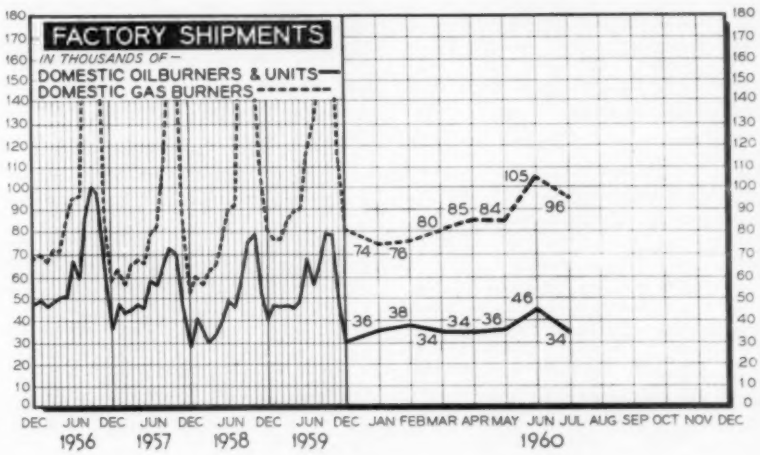
Oilheating dealers in September installed approximately 2,228 central airconditioning units and 1,634 oil-powered water heaters.

Oilheating stocks: Dealers really cleaned out stocks in September, the month ending with 36,977 burners and units in warehouses, compared with 64,972 a month earlier and with 50,636 the previous year.

The September 30 stocks were divided: Separate burners, 17,748; Boiler-burner units, 6,286; Furnace-burner units, 12,943.

Tank stocks: At the end of September, dealers were holding 21,682 customer oil tanks compared with 38,430 a month earlier, and 26,406 on the same date last year.

As we have often mentioned, we accumulate data on tank stocks because they are a good index to the dealer's inventory philosophy on supplies in general outside of the basic heating equipment.



Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than those reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	JULY			SEVEN MONTHS		
	1960	*1959*	*Percent Change*	*1960*	*1959*	*Percent Change*
Separate Burners	20,244	36,132	—44.0	182,760	246,199	—25.8
Boiler Burners	3,758	5,183	—27.5	20,167	24,828	—18.8
Furnace Burners	9,673	12,634	—23.4	54,658	76,299	—28.4
All Domestic	33,675	53,949	—37.6	257,585	347,326	—25.8
Commercial	3,099	3,203	— 3.2	21,323	22,377	— 4.7
Total	36,774	57,152	—35.7	278,908	369,703	—24.6

September Minimum Retail Prices
Key Dealers

	Sept. Avg.	*Aug. Avg.*
Separate Burners	$314	$312
Boiler Burners	743	737
Furnace Burners	614	616

Price Index: Separate Burners
1947-49 is 100%

WHOLESALE

September	95.6	Six months ago	94.7
August	94.6	Year ago	94.3

RETAIL

September	91.4	Six months ago	91.2
August	90.9	Year ago	92.2

What is a typical customer Workload for a fueloil-oilheating Salesman?

AGAIN THIS MONTH, the special study results from a request of one of our regular reporting dealers. He had a feeling that he was not getting everything possible from his sales force. So he wanted to compare it with other companies.

The first question had to do with the number of fueloil accounts for which an individual salesman is responsible. The weighted average is 850 accounts per man.

There was quite a variation here running from the obvious very low figure to a high point of 1500 in a Southern city. A little over a fifth of the companies reported 1000 or more customers per man.

Then we asked how many accounts a full time salesman is able to add in a year. We did not want a straight average here because it is obvious that a new man might take two or three years to get into shape, and again some companies employ retired men who work no harder than they want to in any week.

Accounts sold

To get around this we asked how many accounts were gained by the lowest and the highest man in the individual company. Where they had only one, we put it in the high rather than the low column.

The answer is that the lowest man in the average of all companies gained 151 new accounts and the highest man 315. Quite obviously this does not represent net gain, because the industry is not growing that fast. It has to mean the gross number of new accounts before losses.

Next we asked what percent of all fueloil customers are visited by a salesman in the course of a year. The answer is 42%—the range was from a low of 10% to a high of 100%. The 100% company on this point has 5,800 oil customers. The obvious advantage in calling on customers that may not have been heard of during the year is to make sure that they are happy and also to get leads of new prospects among their friends and neighbors.

Some companies object to this practice, fearing that the customers will resurrect complaints long forgotten.

Salesmen Territories

A little over half (55%) of the companies say that their salesmen work specific territories. Again 84% say that the salesman are asked to handle any and all customer complaints that come up either in their territory or among accounts listed in their names.

Next we learned that 69% of the companies reporting have their oil salesmen also selling oilheating equipment as they get opportunities. And they spend on the average one-third of their time promoting equipment business.

Then we asked the group what commissions, if any, they pay when an equipment salesman creates a new oil account. This question was not too clear to some of the dealers since they obviously were thinking in terms of equipment rather than oil.

Good examples of oil commissions paid to the equipment salesman who creates the accounts range from $10 to $20 on a one-time shot; or typically .25¢ per gal. on the oil consumed as long as the account is held. One prominent dealer pays 1¢ per gal. on oil resulting from an equipment sale but on the first year only, after that he pays .05¢ a gallon in the future years the account is held.

One rather surprising measurement that came out of this study was on the question of house-to-house canvassing. The dealers, as a group, indicate that almost one-fourth of their salesmen's time is spent in this way. They're seeking prospects for either new oil accounts or equipment sales. Of course, when we speak of house-to-house canvassing it might as well be store-to-store because the intent is to show the amount of time the salesman spends on organized "cold turkey" prospecting.

Among the dealers in the reporting group, we find 17% paying their sales force on a straight commission basis; 39% on a straight salary basis; and 44% on a combination salary and commission.

These percentages refer to the number of companies rather than the number of salesmen employed, therefore, are not comparable to the figures published each year in our January issue which are based on number of salesmen.

Then we asked what does the typical fueloil salesman earn in a year. Here again we did not try to average all men within a company because some would be new and just learning their way around. Rather we asked each dealer the income of his lowest paid salesman and his highest.

The average of the entire group of their lowest men was $5,029 and the average of the highest was $7,327. The actual range from the lowest to the highest was $3,600 to $12,800.

Fueloil distributors get their salesmen from quite a number of sources. The largest group of oil salesmen come from the sales forces of other lines of business. Those in the second largest group formerly were fueloil truck drivers. Third in number of salesmen are those that came from want ads. Fourth is the number recruited from former office workers of the company and fifth were those hired away from competitive fueloil distributors.

Comments on the general subject of fueloil salesmen and their working characteristics include these as typical.

"We do not have a fueloil salesman now, but we are putting on one this fall. So far, we have tried to cover this field with our other employees, but have found it to be unsatisfactory." . . . "We have difficulty getting good men from any source."

"Good experienced heating salesmen are hard to come by." . . . "We don't know where to look for good salesmen." . . . "We do not employ salesmen, our principals do all the selling." . . . "The owner and all our employees are our salesmen." . . . "We have been averaging a net gain of 15 customers per week—this includes losses to natural gas which is now wide open in our area."

"By using our drivers as salesmen plus our regular salesmen we call on all of our accounts." . . . "We find it impossible to visit more than 10% of our customers since our salesmen are busy getting new accounts and handling complaints." . . . "Salesmen spend a majority of their time getting new accounts and have very little reason to visit present customers."

"It is hard to get salesmen who will make house-to-house calls." . . . "Most of our prospecting is done by direct mail and phone." . . . "Our salesmen follow up on moves, Welcome Wagon, for sale and sold signs."

"We are fortunate in having a couple of good real estate brokers who give us leads." . . . "Our salesmen get a salary and bonus based on profit before taxes—this helps to eliminate alibis about competitive prices."

Oilburner Permits*

SEPT. 1960		Nine Months 1959	Nine Months 1960
7	Albany, N. Y.	14	17
29	Baltimore, Md.	204	193
55	Bridgeport, Conn.	474	413
2	Columbus, O.	55	12
19	Detroit, Mich.	230	192
54	Elizabeth, N. J.	307	241
10	Freeport, N. Y.	110	113
24	Hartford, Conn.	520	327
24	Irvington, N. J.	167	112
..	Meriden, Conn.	312	..
27	Milwaukee, Wis.	216	155
..	Minneapolis, Minn.	162	..
..	Montclair, N. J.	77	..
4	Morristown, N. J.	23	17
32	Mt. Vernon, N. Y.	301	231
..	Newark, N. J.	542	..
41	New Bedford, Mass.	442	420
..	New Haven, Conn.	432	..
1	New Rochelle, N. Y.	127	73
87	Norfolk, Va.	175	288
..	Omaha, Neb.	46	..
11	Orange, N. J.	39	48
4	Passaic, N. J.	43	38
25	Paterson, N. J.	166	147
145	Philadelphia, Pa.**	825	824
51	Portland, Me.	368	362
127	Portland, Ore.	855	792
15	Poughkeepsie, N. Y.	75	89
32	Providence, R. I.	269	257
69	Richmond, Va.	289	504
50	Roanoke, Va.	563	325
31	Rochester, N. Y.	366	293
7	Rockville Centre, N. Y.	33	30
27	Salem, Mass.	203	249
..	St. Louis, Mo.	418	..
9	St. Paul, Minn.	52	47
2	Schenectady, N. Y.	53	40
66	Spokane, Wash.	314	316
118	Springfield, Mass.	538	580
5	Stamford, Conn.	131	69
52	Washington, D. C.	225	316
19	White Plains, N. Y.	106	68
10	Wilmington, Del.	91	135
71	Worcester, Mass.	545	473
32	Yonkers, N. Y.	95	94
	Matched Totals	9,609	8,900
	Percent Change		—7.4

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

**Courtesy of "Philadelphia Inquirer."

API fueloil Subcommittees Meet at Chicago Convention

SUBCOMMITTEES of the Fuel Oil Committee of the American Petroleum Institute will hold meetings in Chicago during the API Convention there, November 14 to 16.

The subcommittees and their recently appointed chairmen are: fueloil characteristics (specifications), F. C. Haab; education, Norman R. Steenstra; electric heat competition, C. E. Kramb; legislation, C. R. Jonswold; market development, T. J. Scott; new projects, Wiley Butler; oil-powered home, T. R. Loizeaux; plastic tanks, J. A. Collins; and heading the research group, J. L. Minner.

Revised Boiler Standard is published by Canadian group

THE CANADIAN Standards Association, Ottawa, has announced the availability of the sixth edition of CSA Standard B51-1960—"Code for the Construction and Test of Boilers and Pressure Vessels," which supersedes all previous editions.

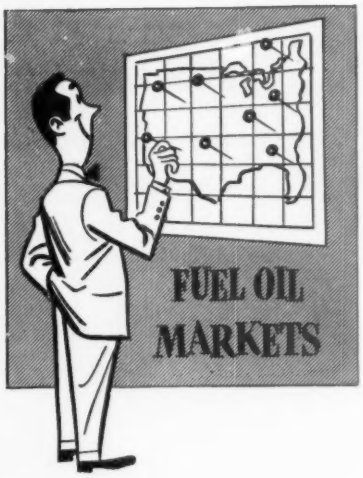
The purpose of this Code is to provide for the safe design, construction, installation, operation, and repair of boilers, pressure vessels, and related equipment and to promote uniform requirements among the provinces in Canada.

Where is the

New home Market?

	No. of Permits Issued July	No. of Permits Issued 7 Mos.
Alabama	1,047	6,953
Arizona	1,332	11,944
Arkansas	271	1,908
California	14,437	117,266
Colorado	1,502	9,336
Connecticut	1,134	9,303
Delaware	149	1,416
District of Columbia	66	1,187
Florida	4,632	40,967
Georgia	1,389	12,028
Idaho	130	796
Illinois	3,849	25,141
Indiana	1,483	9,050
Iowa	590	3,706
Kansas	519	3,321
Kentucky	641	4,409
Louisiana	769	6,681
Maine	137	791
Maryland	2,051	13,042
Massachusetts	1,739	10,849
Michigan	2,643	16,476
Minnesota	1,019	6,557
Mississippi	649	2,912
Missouri	1,718	9,642
Montana	90	813
Nebraska	553	3,086
Nevada	494	3,089
New Hampshire	133	785
New Jersey	2,628	17,417
New Mexico	505	3,164
New York	9,338	45,038
North Carolina	1,076	6,294
North Dakota	239	931
Ohio	3,958	27,491
Oklahoma	558	4,674
Oregon	667	5,279
Pennsylvania	2,471	16,897
Rhode Island	292	1,880
South Carolina	189	1,492
South Dakota	103	735
Tennessee	965	8,490
Texas	3,824	33,409
Utah	518	3,745
Vermont	16	132
Virginia	2,157	16,167
Washington	1,169	9,119
West Virginia	174	930
Wisconsin	1,312	9,446
Wyoming	145	882

These figures are collected by the Census Bureau from selected areas. They represent approximately 77% of all dwelling construction in the United States.



THE PRICE TABLE shows many changes this month. Along the Eastern Seaboard, tank car prices range one to three points higher than September. Some tank wagon prices in this area showed considerably greater fluctuations with a gain of .6¢ at Philadelphia topping the group. Hartford and Syracuse remained the same with all other cities gaining at least a point.

In the Midwest, margins were squeezed in Cleveland when the wholesale price went up .5¢ and the retail posting dropped back .4¢; Milwaukee shows a 1¢ lift in the tank wagon column, and Detroit picked up .5¢.

In our semi-annual check on secondary stocks, we find that distributors at the retail level East of the Rockies have more oil on hand than last year with nearly 80% of storage filled.

Distillate Fueloils

PRIMARY STOCKS*
(Thousands of Barrels)
East of Rockies

	Oct. 7 1960	*Oct. 9 1959*
East Coast	70,193	74,361
Midwest	55,509	52,573
Gulf Coast	28,252	32,559
Total	153,954	159,493

SECONDARY STOCKS†
(East of the Rockies)

	Percentage filled on September 30		
	1960	*1959*	*1958*
New England	87.2%	66.7%	72.7%
Mid-Atlantic	80.6	82.6	72.9
South Atlantic	48.8	32.0	42.8
Total East Coast	79.3	73.5	70.1
Midwest	78.4	75.3	69.6

*American Petroleum Institute.
†Estimated by FUELOIL & OIL HEAT.

No. 2 Heating Oil
(Including No. 3 & PS200)

Price per gallon as of October 10, 1960

	Tank Car†	*Tank Wagon*
Portland, Me.	9.5	14.3
Boston	9.5	14.0
Providence	9.5	14.0
Hartford	9.85	13.9
New Haven	9.5	14.0
Syracuse	10.3	14.3
Albany	9.7	13.7
New York	9.5	13.9
Newark	9.5	13.7
Philadelphia	9.5	13.9
Baltimore	9.5	13.8
Wilmington, N. C.	10.1	13.7
Washington	10.1	14.1
Richmond	10.15	13.8
Charleston, S. C.	10.1	13.8
Chicago	10.0*	14.6
Detroit	10.5*	15.1
Cleveland	11.7*	15.2
Minneapolis	10.429	15.2
St. Louis	10.0*	14.9
Indianapolis	10.39*	15.4
Milwaukee	10.235*	14.4
Des Moines	11.1	14.8
San Francisco	12.05*	14.8
Portland, Ore.	10.825*	15.1
Seattle	10.6*	15.2
Spokane	12.6*	16.8
Los Angeles	11.55*	14.3

Tank wagon prices shown are for maximum one-time delivery discounts.

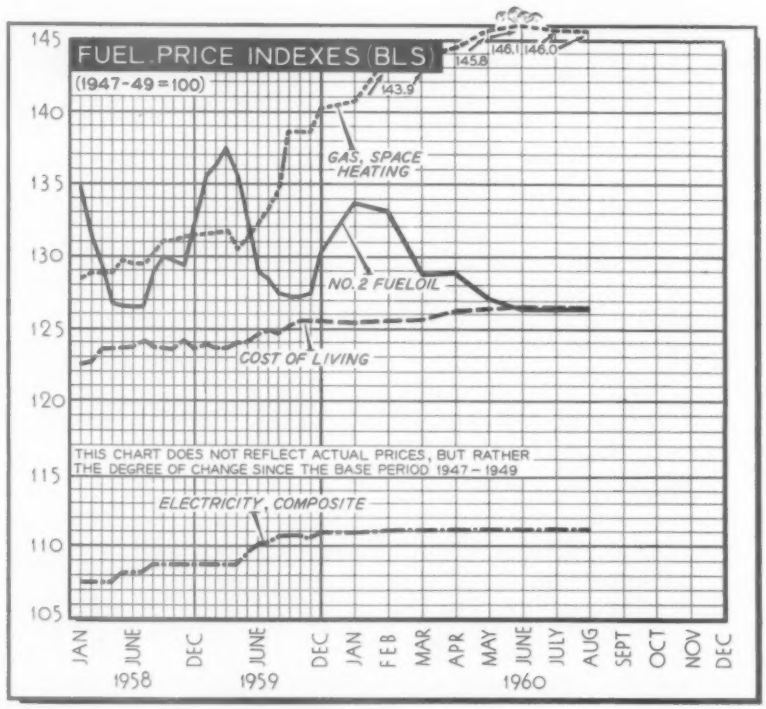
*Delivered.

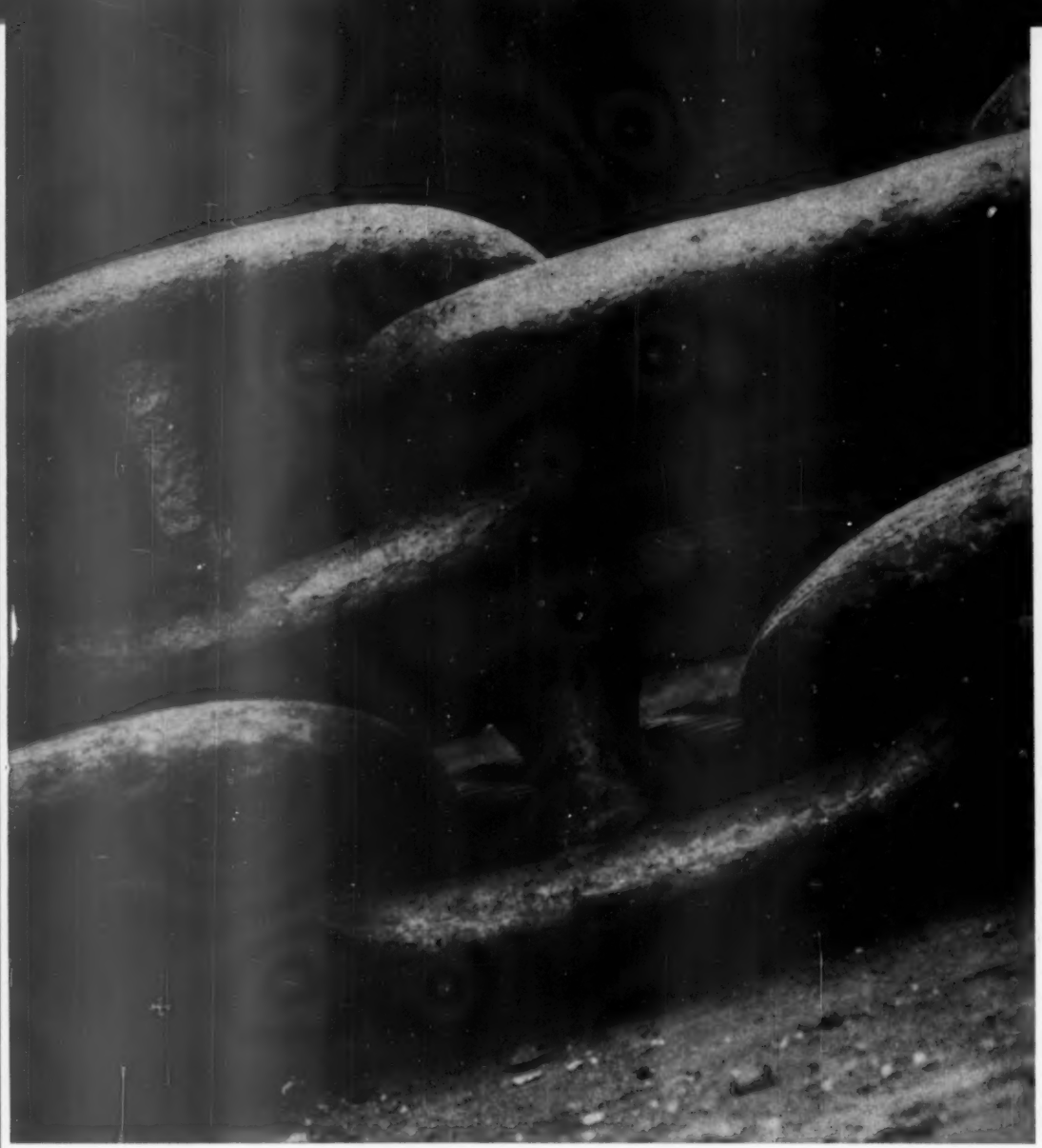
†Tank car prices are typically those paid by fueloil distributors as a purchase price. On the West Coast, this term more often indicates a retail sale to a large commercial account. This usually is a half cent below tank wagon price.

Degree Day Table

	Norm.	*Sept. '59*	*'60*	*Percent Change**
Albany AP	139	143	99	—28.8
Atlanta AP	8	8	5	—37.5
Baltimore CO	29	28	4	—86.2
Boston AP	77	79	103	+33.8
Buffalo AP	122	111	77	—36.9
Charlotte, N. C. AP	7	2	4	—42.9
Chicago AP	90	62	26	—71.1
Cincinnati CO	42	35	14	—66.7
Cleveland AP	75	78	67	—10.7
Dallas AP	0	0	0	..
Denver AP	120	191	90	—25.0
Des Moines AP	99	131	82	—17.2
Detroit AP	96	92	53	—44.8
Grand Rapids AP	144	109	90	—37.5
Hartford AP	101	115	130	+28.7
Helena AP	320	351	242	—24.4
Houston AP	0	0	0	..
Indianapolis AP	79	54	28	—64.6
Kansas City AP	44	44	12	—72.7
Los Angeles CO	17	0	0	..
Louisville AP	51	11	10	—80.4
Milwaukee AP	134	117	142	+ 6.0
Minneapolis AP	157	152	202	+28.7
New Orleans CO	0	0	0	..
New York CO	39	40	20	—48.7
Omaha AP	88	115	63	—28.4
Philadelphia CO	33	28	25†	—24.2
Pittsburgh CO	56	55	18	—67.9
Portland, Me. AP	199	181	211	+ 6.0
Portland, Ore. CO	85	114	83	— 2.4
Providence AP	107	101	117	+ 9.3
Roanoke, Va. AP	50	28	19	—62.0
St. Louis AP	45	30	7	—84.4
Salt Lake City AP	88	170	16	—81.8
San Francisco CO	110	73	163	+48.2
Sault Ste. Marie AP	298	231	276	— 7.4
Seattle CO	134	167	146	+ 9.0
Toledo AP	102	98	64	—37.3
Washington AP	37	28	7	—81.1

*Compared with normal. †Airport Office.





HARTOL

NO "MISSING LINKS"...

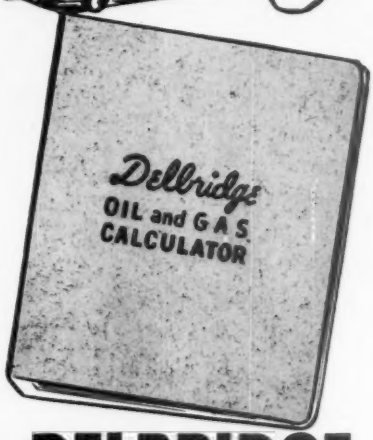
When our organization links up to yours you forge a strong connection you can count on through thick and thin. That's because HARTOL combines the hard-won experience of three decades of petroleum marketing with the vigor of the fastest expanding organization on the Eastern seaboard. In addition to top grade petroleum products and unbeatable service, HARTOL offers you the extras of "know-how", fair dealing and the ability to see *your* side of today's business problems. Call your HARTOL representative and talk about it.

- Largest independent marketer of gasoline and fuel oil on the Eastern seaboard. 17 modern terminals.
- First in experience . . . cooperation with independent jobbers and dealers . . . ability to serve.

HEATING OILS • GASOLINE • KEROSENE

HARTOL **PETROLEUM CORPORATION**
50 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

Fastest, Easiest Way to Figure Fuel Oil Charges!



DELBRIDGE
Oil & Gas Calculator

Stop figuring fuel oil charges the old-fashioned, long-hand way! No more errors—no more dissatisfied customers!

Figure fuel oil charges fast—easily—accurately—with the DELBRIDGE Oil & Gas Calculator! Total amount of sale is *pre-calculated* for you without laborious long-hand figuring and errors—simple as finding a phone number!

Covers prices from 10c to 40c per gallon **by steps of 1/10¢. Shows gallonage from 1 to 250 gallons by steps of 1 gallon—then to 5,000 gallons in easy steps.**

Durable, long-lasting leatherette metal-ring binder. Only 5¼" x 6½"—fits easily in coat pocket. Guaranteed accurate by Lloyd's of London. Only $5.00 each.

Try the DELBRIDGE Oil & Gas Calculator for 10 days . . . *without obligation!* Prove to yourself how it can save time . . . cut down costly errors. Mail coupon for FREE 10-day trial. *Send no money!*

FREE TRIAL COUPON!

DELBRIDGE CALCULATING SYSTEMS, INC.
2502 Sutton Ave., St. Louis 17, Missouri

Send the DELBRIDGE Oil & Gas Calculator . . . *without obligation!* We will approve your invoice for $5.00 (plus postage) within 10 days if we decide to keep the Calculator.

Name.....Title.....

Company.....

Address.....

City.....Zone...State.....

Names in the News

William W. Morrisey has been appointed director of marketing, The Lau Blower Co., Dayton, O. For the past five years he had been blower sales manager, and before that was sales engineer for Waterman - Waterbury. He also has been associated with White-Rodgers.

Earl C. Thompson has been appointed director of engineering, The Nu Way-Sundstrand Corp., Rock Island, Ill. Thompson was chief engineer of the Power Flame Division, Siemon Manufacturing Co. for two years before joining the company.

Stanley A. Gorski has been named manager of marketing, General Electric's Appliance Control Department, Morrison, Ill. He succeeds *Donald J. Harrington* who has been appointed manager of marketing, Capacitor Department, Hudson Falls, N. Y. *Lawrence H. Van Wassenhove* is the new advertising-sales promotion specialist, Appliance Control Department.

William H. Wildes has been named vice president, Buckley and Scott, Watertown, Mass. Wildes, who has been general manager of the firm, will also continue in that capacity.

A. G. Baerenklau, Baerenklau & Co., Brooklyn, N. Y., died on October 2. "Al" was a veteran and well-known figure in the trade and represented the third generation of his family in the heating business. For a number of years too the company has maintained a prominent position in the fueloil and oilheating picture.

DONGAN
Oil Burner Transformers

. . . . . Custom Built to your Specifications

Dongan ignition transformers are standard on leading oil burners; approved by U.L. and C.S.A.; available in many sizes, domestic and industrial. Features include high voltage windings; cool centers; no interference; custom design. Just send us a blueprint of the type of mounting you need!

Get this New Portable Transformer Tester!

You'll like the convenience of Dongan's new test unit. Included: high voltage potential transformer; voltmeter; pair of high tension test leads; pair of primary leads. For bench or field work, easily portable — weighs just 15 pounds. *Write for prices.*

In your pocket . . . complete data for replacement transformers: pictures, cross-index tables that give specific Dongan replacements, dimensions, mounting drawings and instructions. Ask for your complimentary copy today.

SEND FOR YOUR FREE TRANSFORMER CATALOG TODAY

The Dongan Line Since 1909

DONGAN ELECTRIC MANUFACTURING CO.

2981 Franklin St., Detroit 7, Mich.

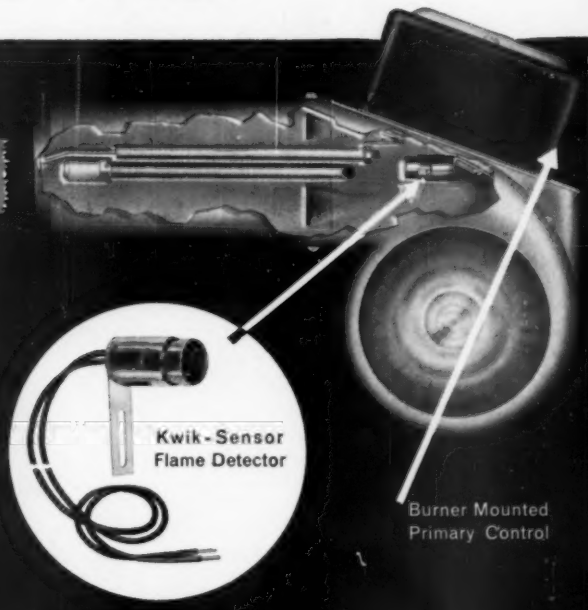
NEVER BEFORE an Oil Burner Control Like This!

KWIK-SENSOR

by

WHITE-RODGERS

Kwik-Sensor uses a new flame detector that makes possible the first practical burner-mounted control. Kwik-Sensor can be applied by the manufacturer to any domestic oil burner in minutes . . . no adjustments or relocation of the flame detector are necessary, even though the burner may be used in different types of furnaces or boilers, having various types of combustion chambers.



Fast, Simple Installation

The Kwik-Sensor flame detector need only be positioned to pick up the radiant rays of the oil flame. The primary control can be mounted in or on the burner, in the furnace or boiler vestibule, or in any convenient spot. No special engineering required.

Instantaneous Response

Unlike heat-sensing control elements that require a time interval to respond, the Kwik-Sensor is a flame-sensitive resistor which reacts *instantly* to flame ignition or extinction. It responds *only to the radiant rays from the oil flame.*

New Flame Detector Location

The Kwik-Sensor flame detector is mounted at the blower end of the burner assembly—away from the flame area. Here it operates in a clean, cool stream of air—unaffected by soot, dirt or heat, and where it does not disturb the primary air pattern or interfere with servicing of burner.

Complete Factory Wiring

Kwik-Sensor makes possible a *fully wired* furnace, burner or boiler unit . . . all quality controlled *in the factory.* This means production-line economies . . . simplified inventories . . . and the elimination of problems long associated with the many variables of in-the-field stack mounted control installations.

Write now for specifications, dimensions, wiring diagram, and additional facts.

Complete Control Package

Kwik-Sensor combines with new D'LUXline Thermostat of straight-line design to provide a perfect control package for domestic oil burners.

WR

WHITE-RODGERS

St. Louis 6, Missouri
1209 Cass Avenue

Toronto 8, Canada
611 Gerrard St. East

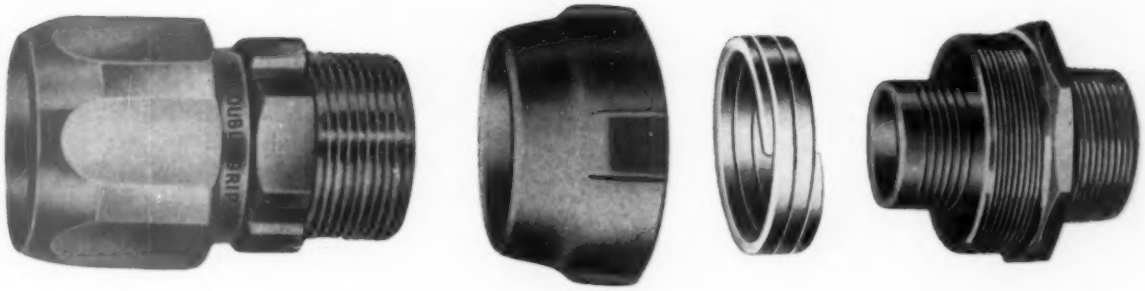
NOW SCOVILL HAS THEM All!

Announcement: On the first of September 1960, Scovill Manufacturing Company purchased the International Couplings, Inc. line of permanent and re-attachable hose couplings. This important acquisition has far-reaching benefits for all users of industrial hose couplings. It means Scovill now offers . . .

Specify Scovill Couplings! You select from the most complete line of fuel oil and gas pump couplings (permanent and re-attachable) in the industry today. You get fast, efficient service—coupling orders received by Scovill are shipped without delay from any of Scovill's nation-wide network of warehouse facilities. You get expert advice from the industry's largest —and finest—sales force. For complete details, write: Scovill Manufacturing Company, Industrial Couplings, Waterbury 20, Conn.

Hose Couplings by **SCOVILL**

Main office: 99 Mill Street, Waterbury, Connecticut. **Cleveland:** 4635 W. 160th Street. **San Francisco:** 434 Brannan Street. **Greensboro, N.C.:** 1108 East Wendover. **Houston:** 2323 University Blvd. **Toronto:** 334 King Street, East.



***!All** sizes in permanent and re-attachable hose couplings from 3/4" to 4"!*

***!All** the warehousing facilities needed for fast, efficient service anywhere in the U. S. and Canada!*

***!All** these well-known hose coupling trade names: Stream-Flo, Rib-Lox, Super-Grip, Dubl-Grip, Inter-Flo, Dubl-Guard—plus the famous Scovill line of 570-H and 520-H Couplings!*

AIR IS THE VILLAIN!

in hot water heating or chilled water cooling systems

MAID-O'-MIST

Automatic AUTO-VENTS

CONTINUOUS VENTING ACTION
ENDS CIRCULATION WORRIES!

Float Type

No. 7 AUTO-VENT®

No wonder Number 7 is a big favorite with both heating and air-conditioning experts! Fully automatic, this brass vent has a self-closing, float operated valve — all mounted on a removable bonnet for quick servicing. Small (4 3/8" x 2 1/4" with 1/8" I.P. female connection) it does a big job of eliminating air. For pressure up to 75 lbs.

Float Type

AUTO-VENT No. 67

Is the space limited? Then No. 67 is your Auto-Vent! Its overall size is only 3 3/16" x 1 1/2" with 1/8" I.P. male connection. Takes 30 lb. pressure.

AUTO-VENT No. 72

A fast-venting valve of the expansion type for convectors, baseboard and free-standing radiation. For vertical or horizontal mounting. Size 1 1/4" x 1 1/4" with 1/8" I.P. male connection. Disc dries quickly because of immediate drainage.

Float Type

No. 27 AUTO-VENT

Smaller sized (3" x 2 1/2") for horizontal mounting with 1/8" I.P. female side connection. Use on convectors, radiant coils, etc. Takes up to 50 lb. pressure.

No. 37 AUTO-VENT

Similar to No. 27, but designed for horizontal mounting with 1/8" I.P. vertical male bottom connection. Size 3" x 2 1/2". 50 lb. pressure.

Float Type

Get full information from your jobber or write for catalog, today!

MAID-O-MIST Inc.

MAID-O'-MIST, Inc.

3217 NORTH PULASKI ROAD · CHICAGO 41, ILL.

. . . . Names in the News

Edward E. Harwood and *John H. Martin* have been appointed sales managers, White-Rodgers Co., St. Louis, Mo. Harwood heads the original equipment manufacturer division, and Martin the wholesaler division. Both men will work with Gerald J. Powell, national sales manager.

Harwood

Martin

Another White-Rodgers' appointment concerns *William L. Mayo* who has been named product manager. He will operate within the executive sales group handling special assignments.

Richard L. White has been named eastern division manager, Blackmer Pump Co., Grand Rapids, Mich. White is in charge of sales for ten eastern states, with offices in New York City.

Paul W. Sheldon has been appointed advertising co-ordinator, Gulf Oil Corp. Based in Pittsburgh, he will be a member of the newly-formed advertising committee consisting of Craig Thompson, director of public relations, R. A. Hunter, administrative vice president-marketing; and B. W. S. Dodge, director of advertising and sales promotion, domestic marketing. As co-ordinator, Sheldon will oversee all domestic and international advertising, media research, and advertising planning for the corporation.

Robert J. Pierson, Jr., has been appointed vice president, Marketing, Home Products Group, Rheem Manufacturing Co., New York, N. Y. Pierson has been with Rheem since 1954, serving most recently as general sales manager of the Home Products Division.

The appointments of *Robert B. Gilbert* as Western Division sales manager and *Runo C. Anderson* as Eastern Division sales manager were also announced.

YOU CAN BUY CHEAPER ... BUT NONE BETTER

AT THE COMPETITIVE PRICE

GAS FIRED

Assembled and Wired Winter Air Conditioners . . . Upflow, Counterflow and Horizontal . . . Heavy Gauge Heat Exchanger and Cabinet.

GAS OR OIL FIRED

Basement Type Winter Air Conditioners . . . Burn either Gas or Oil with Equal Efficiency . . . Heavy Gauge Heat Exchanger.

OIL FIRED

Assembled and Wired Winter Air Conditioners . . . Upflow, Basement and Counterflow . . . Heavy Gauge Round Heat Exchanger with Refractory Firebox.

• When you are seeking a better Furnace or Air Conditioning Unit, you'll find none that provides the many desirable qualities of Moncrief — and is so competitive in price.

When you are seeking a low price, you'll find that certain cheaply constructed units cost less than Moncrief.

However, it's a fact that superior Moncrief Furnaces and Air Conditioning Units are competitive in price with many cheaply constructed units.

So why not get competitive and stay competitive with Moncrief? This is the line you know you can rely on for dependable performance, rugged construction and advanced design — backed by 65 years of manufacturing experience.

Call your Moncrief Wholesaler, now. Enjoy a competitive price without paying the premium of a large inventory.

MONCRIEF

THE HENRY FURNACE COMPANY · MEDINA, OHIO

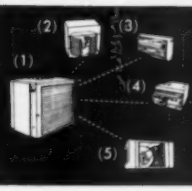
HEATING AND AIR CONDITIONING UNITS

MONCRIEF SINCE 1895

FURNACE PIPE AND FITTINGS

Horizontal Furnaces 4 Oil Sizes 4 Gas Sizes

Year 'Round Combination A.C. Units Air or Water Cooled, Gas or Oil Fired



(1) 2, 3, 4, 5 H.P. Air Cooled Condensing Units, (2) Plenum Evaporator, (3) Duct Evaporator, (4) Counterflow Evaporator, (5) Blower-Evaporator Unit.

Gas Conversion Burners

Gas Fired Unit Heaters, 5 Models

Rely on the WHISTLER for New Installations, too!

WHISTLER
(actual size)
another fine product from the makers of Galongage, Guardian, and Fil-Thru.

The Whistler is easy to install; efficient in performance. That's why several hundred oil companies have used them on existing installations.

AND the Whistler is just as reliable on new installations, too.

The Model D is designed especially for new jobs.

Has the same quality construction as the Model E. Built to last indefinitely. Proved by thorough field-testing and nation-wide use by oil companies to give top performance. Compact and light weight. Requires less storage space and costs less to ship. It's the convenient, popular fill-signal. Only one size to stock.

And when you use the Whistler with the Guardian or other fractional-reading gauge, you have all the advantages of two separate instruments at less expense than a combined signal-and-gauge.

So, rely on the Model D Whistler for your new installations.

Write for prices and complete information.

APPLIED MECHANICS COMPANY
381-385 CONGRESS ST., BOSTON 10, MASS.

LETTERS

COMO OIL CO.
Duluth 2, Minn.

Editor:

I've just had the opportunity to read through the September issue of FUEL-OIL & OIL HEAT and I want to congratulate you on the series of articles in this issue. I think they are among the best ever contained in a single issue.

MYLES HALL

SCARBOROUGH, YORKSHIRE
England

Editor:

I wonder how many other heating engineers in England are fortunate enough to receive your magazine each month as I do. Oilfired heating is just coming into its own in England. We are all novices in it. So, I glean a great deal of information from the very interesting articles and the advertisements in your magazine.

In "Editorial Leaks" (July FUELOIL & OIL HEAT) you wrote a short article on oil in Great Britain and I thought you might be interested in the enclosed cutting, which appeared in the National Press after an increase in the price of coal. The Chancellor's credit restrictions mentioned in the "Leaks" item do not include oilburning equipment.

(Editor's note: The newspaper clipping referred to had the title, "Is Coal pricing itself out of your home?", and opened:

"Coal has thrown in the towel. Oil has won. It was a one-sided scrap anyway. The coal people never seemed to believe in themselves, never came out fighting. They let the oil people get away with every round.

"The 6d. a bag increase means that thousands of us who stayed loyal to the British miner, patriotically kept the home fires burning with British coal and coal products, will now switch over to one or other of coal's mortal enemies—probably to oil.

"Examples have been set by the Queen and the Prime Minister. Both Buckingham Palace and Downing-street are going over to oil.")

DYNATHERM

The excellence of Hydronics

IT SQUEEZES HELL OUT OF EVERY DROP OF OIL

IT TURNS OIL INTO MONEY AND FOR DECADES WE KNOW A LOT OF "IMPS" THAT GOT RICH ON THAT AND STILL ARE!

HOW ABOUT YOU?

*IMP—Important Money Preserver!

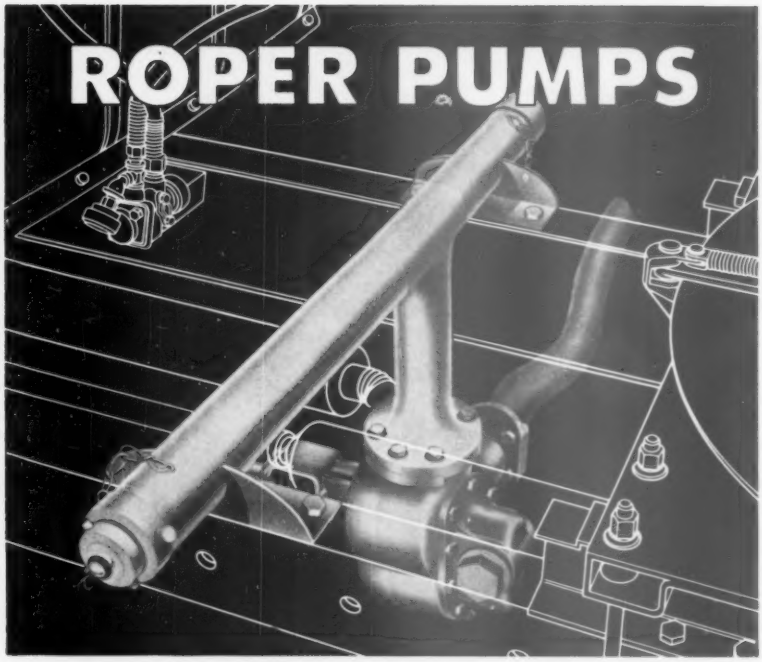
Dynatherm the Unequaled Replacement Unit — Try it, we know you will agree!

Ask for our "Users Testimonial Booklet" — it is a Record of Achievement!

DYNATHERM DIVISION
BETHLEHEM FOUNDRY & MACHINE CO.
225 W. 2ND STREET
BETHLEHEM, PENNSYLVANIA
Phone UNiversity 7-4605

Gentlemen:
We are interested in Dynatherm—Please let's have information forwarded AT ONCE!
We are in a hurry. Phone us at _____
Name _____
Address _____
City _____ Zone ____ State _____

fueloil & oilheat



new delivery convenience and speed with

SUSPENDED MOUNTING

MODEL 3604 • 125 GPM AT 545 RPM • PRESSURES TO 100 PSI

Roper Series 3600 tank truck pump in #4 size is now available in new suspended mounting. When mounted, pump is located directly behind cab, suspended from steel T-shaped piping arrangement cradled in bracket on top of tractor chassis frame. Suspended pump mounting makes installation and removal fast and easy. Combination of slip joint power take-off drive allows quick exchange of pump for transfer of different liquid. While one pump is being cleaned, another can be installed, so that no delivery time is lost. This interchanging of pumps is often less expensive . . . often much safer . . . than cleaning pumps in installed position.

- **ALL-WELDED CONSTRUCTION** eliminates leak problems found in tubing or threaded joints.
- **TAPERED DISCHARGE LINE** and bottom drain plug makes drainage easier, more complete.
- **ENDS OF CROSSBAR** provide hose connections for curb or street side mounting.
- **LIGHTWEIGHT CONSTRUCTION** needs no channel brackets or other supports.

For information about your specific pump needs, contact your nearest Roper dealer

ROPER HYDRAULICS, INC.

Dependable pumps since 1857

COMMERCE, GEORGIA

The "Special Study" in August was very interesting. In England more than 90% of all oilburners in the home have to supply both domestic water and heating requirements. This is due to the high cost of gas and electricity. We do this by incorporating an indirect cylinder into the system. Flow and return pipes are taken from opposite sides of the boiler, one side to feed gravity to the indirect cylinder, the other side on pump and thermostatically controlled to supply the heating. This is the most practical method.

As I have never seen mentioned or advertised any indirect cylinders, I take it they are not in general use in America. "Tankless heaters" written of in one article in connection with combined heating are new to me. To my knowledge they are not used over here.

J. E. ULLIOTT

OIL HEAT ENGINEERING CO., INC.
New York 28, N. Y.

Editor:

As a reader and subscriber to your very constructive and informative publication, I have sought articles of action by local organizations regarding a bill to permit property owners a rent increase whenever outmoded, inefficient and perhaps dangerous heating and hot water equipment is replaced in multiple dwelling buildings. To date I know of no such bill or any concerted effort on the part of our industry in this respect.

In my inspections of such equipment and my contacts with owners of such buildings, I am convinced that we may be lagging behind. Due to persistent effort and determination the electrical and plumbing industries have been successful in securing passage of regulations permitting rent increases for adequate wiring and piping.

WILLIAM E. MURRAY
Combustion Engineer

❖ ❖ ❖

Henry S. Loeber has been named sales manager, Chester Cable Corp., Chester, N. Y., a subsidiary of Tennessee Corp. He will direct the marketing of the company's wire and cable products. *Benjamin Levinson* has been appointed chief engineer.

WATTS 1000 CIRCULATOR

IMPROVED DESIGN FEATURES AND HIGHER PERFORMANCE STANDARDS

. . . were needed for the expanding Hydronics market. To meet the demand, Watts introduced its No. 1000 — an all-new circulator made possible by advanced design knowledge, manufacturing skill and field experience.

Quiet performance and minimum maintenance were Watts engineers' twin goals. They succeeded, by incorporating unique design features providing these outstanding advantages:

LESS NOISE Hydraulic, electrical and mechanical sounds eliminated.

LESS MAINTENANCE Fewer parts. Impeller attached directly to motor shaft. Unitized construction eliminates impeller shaft, bearing bracket and coupling.

LESS FRICTION Power is used to move water, not mechanism. Reduces wear and tear.

LESS SPACE Compact 9¼" x 11¼" size ideal for small utility rooms and modern package boilers.

LESS WEIGHT Only 25 lbs. shipping weight.

MORE QUALITY Premium performance **without** premium cost. Design proved under toughest on-the-job conditions and exhaustive laboratory tests.

MORE PERFORMANCE More than ample starting torque means reliable operation. Rugged, dependable parts throughout.

MORE CIRCULATION Correct hydronic performance curve assures flow design standards for modern piping and zoning.

MORE EFFICIENCY Unitized construction with dynamically balanced motor matched to design for long life.

MORE STYLE Neat, modern, complimentary design.

Be sure . . . Use **WATTS**

Protection and Control Specialties

COMPLETE LINE OF WATTS HYDRONIC ACCESSORIES

To complement the No. 1000 Circulator, Watts introduces five new Hydronic accessories. With them, and with Watts tempering valves and ASME safety relief valves, your forced circulation hot water heating jobs can provide premium performance at competitive prices. Call your wholesaler or write us for Bulletin F-1000. Watts Regulator Co., Lawrence, Massachusetts.

No. 2000 Two-Way Flow Check

No. 5000 Combination Air Eliminator with Flow Check

No. 4000 Combination 4-in-1 Tank Drain

No. 3000 Radiator Diversion Fittings

No. 560C Feed Water Pressure Regulator

GOOD FIRES THE FIRST TIME...EVERY TIME
DELAVAN NOZZLES

You needn't try two or three nozzles to get a good fire. Try a Delavan. Devalan nozzles give you cleaner, quieter 'sure-fires' time after time. Delavan nozzles have exclusive Bi-Metal Construction. All Delavan nozzles (up to 1.00 GPH) feature the new Sintered Filter for improved nozzle protection.

The industry's only all purpose nozzle, the Delavan type W, covers the .50 through 1.35 GPH range. The hollow cone, type A nozzle is recommended especially for burners with hollow cone air patterns. And the type B Delavan nozzle provides smoother ignition on large burners.

Delavan is devoted exclusively to the design and production of nozzles. And each nozzle is individually tested. Another reason you can depend on Delavan.

DELAVAN Manufacturing Company
WEST DES MOINES • IOWA

Canadian Representative — Ontor, Ltd.
12 Leswyn Road, P.O. Box 608, Station T, Toronto 10, Ontario, Canada

I-B-R issues Schedule for hydronics Schools

TWENTY hydronic heating schools have been scheduled by the Institute of Boiler and Radiator Manufacturers. According to R. E. Ferry, general manager, they will start January 10 and continue through June.

The tuition fee is $42 for the three-day course which will be conducted by Arthur Wales, field training director of the Institute. Students work out heat loss calculations, design, installation and piping for hot water heating systems. Included in the course are lessons on reducing installation costs, the sales advantages of quality systems and the preparation of bids.

The schedule for the school is as follows:

Jan. 10-12	Dayton
Jan. 17-19	St. Louis
Jan. 24-26	Detroit
Jan. 31-Feb. 2	Cleveland
Feb. 7-9	Providence
Feb. 14-16	Portland, Me.
Feb. 21-23	Newark
Feb. 28-March 2	Richmond
March 7-9	Gaithersburg, Md. (Washington-Baltimore area)
March 14-16	Philadelphia
March 21-23	Garden City, N. Y.
April 11-13	Chicago
April 18-20	Minneapolis
April 25-27	Duluth
May 2-4	Milwaukee
May 9-11	Boston
May 16-18	Buffalo
May 23-25	Syracuse
June 6-8	Williamsport, Pa.
June 27-29	White Plains, N. Y.

Further information regarding the Schools to be held in 1961 may be obtained by writing to the I-B-R School, Room 408, 608 Fifth Avenue, New York 20.

Updated meter Standard is published by API

A REVISED STANDARD on the installation of meters, meter provers and their calibration, meter proving procedures and meter performances has been published by the American Petroleum Institute.

The volume, API Standard 1101, "Measurement of Petroleum Liquid Hydrocarbons by Positive Displacement Meter," contains a section on the operation and maintenance of metering systems. Copies cost $3 and may be ordered from API, 1271 Avenue of the Americas, New York 20, N. Y.

"We Average Better Than 200 Gallons Per Customer Delivery–With No Run Outs!"

Heling Bros. Ups Per Delivery Gallonage 22% Using Singer Fuel Use Computer

"We've found the Singer Fuel Use Computer takes the guess-work out of scheduling deliveries" says Walter C. Heling, president of Heling Bros. Fuel, Inc., Lindenhurst, N. Y. "We have proven to even our most skeptical customers that the computer enables us to estimate their oil reserves almost exactly at all times."

Once having gained customer confidence, Heling Brothers was able to school nearly all of them to scheduled area delivery. Result: Customer peace of mind in the knowledge that automatic service will keep their oil reserves up. Customers no longer need to check oil reserve levels.

"We recorded an increase of 22% per delivery gallonage over a comparable period of time for preceding year," says Heling. "With automatic delivery we cover as many miles and serve the same number of customers better—with one less truck. This all adds up to three fewer stops per customer for the heating season."

"The Singer Fuel Use Computer creates savings in manpower; enables us to route our trucks more advantageously; and has increased the average drop to 200 plus gallons per delivery" says Heling Brother's dispatcher Bernard Wolf.

2828

Find out how the Singer Fuel Use Computer can help you make maximum profits in your business.

HRB

HRB-SINGER, INC.

A SUBSIDIARY OF THE SINGER MANUFACTURING COMPANY

90 Schureman Street, New Brunswick, N. J.

Here's proof

Superior quality forged body —precision machined
Uniform wall thickness —no weak spots
Extra heavy reinforcing rim
Larger diameter cam ears for longer service life
Extra Hi-Strength forged handles —greater economy
Stainless Steel pins —greater safety and longer service
Uniform heavy wall thickness —no weak spots
Recess retains gasket in coupler and assures proper placement
Superior quality forged body —precision machined —accurate tolerances

your best buy is EVER-TITE -the best quality quick couplings

Bronze
Aluminum
Stainless
Carbon
Malleable
Hastelloy

You save time and money when you use EVER-TITE COUPLINGS, because you get speedy deliveries—no leaks.

The tightness is predetermined in manufacture so you can be *sure* with EVER-TITE.

The EVER-TITE trademark is a hallmark of dependability. EVER-TITES do the best job in the transfer of every type of product through hose or pipe.

Get EVER-TITE and get the *best*. Ask your distributor now.

EVER-TITE COUPLING CO. INC.
254 West 54th Street
New York 19, N. Y.

OHI sponsors air pollution Research at Michigan State

A RESEARCH PROJECT sponsored by the Oil-Heat Institute of America, Inc., is now under way at Michigan State University under the direction of Charles Pesterfield, Professor of Mechanical Engineering at Michigan State, Technical Secretary of the Commercial-Industrial Section, Manufacturer Division of OHI and Chairman of the Oil Burner Committee of the Air Pollution Control Association.

A complete study of smoke emission and the chemical composition of such smoke arising from the operation of oilburners will be made and will develop information concerning the quantitative volume of the smoke from oil burning equipment.

Engineering service Company for Oilheating is organized

PROFESSIONAL engineering services for the oilheating industry will be available from the Fuel Engineering Co., New York. A new division, Oil Heat Engineering Services, has been formed according to Gregory Gould, president.

Company specialists will offer technical assistance in such matters as code revisions, representation before boards of standards, and air pollution control. The staff will also handle investigation of fires and explosions, and will provide expert witness services.

Air-Conditioning Institute issues compressor Standards

TWO NEW STANDARDS for compressors and condensing units have been published by the Air-Conditioning and Refrigeration Institute. ARI Standard 516 (Refrigerant 12 and Refrigerant 22 Compressors and condensing Units, 25 hp and larger) replaces Standards 5-21 and 5-22.

Standard 511 (Ammonia Compressors and compressor Units) will replace Standards 5-12, 5-13, 5-14 and 5-15.

Each of the new publications is priced at 50¢ and may be obtained from the Air-Conditioning and Refrigeration Institute, 1346 Connecticut Ave., N.W., Washington 6, D. C.

THAT EXTRA SOMETHING!

NEUTRODA

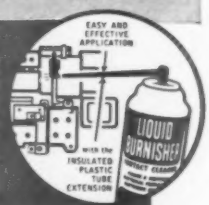
THE ONLY FUEL OIL NEUTRALIZER THAT WORKS 2 WAYS

1. *Destroys odor at its source.*
2. *Actually neutralizes fumes.*

POWDER or SPRAY
(Both in 16 oz. containers)

LARGEST SELLING FUEL OIL NEUTRALIZER IN THE WORLD

Cleans & Restores Contacts on Oil Burner, Air Conditioning and Gas Controls, etc.



LIQUID BURNISHER

Such as: Relays, solenoids, breakers, thermostats, etc.

MAGNE PATCH

A POWERFUL MAGNETIC EMERGENCY TOOL

- *Stops oil tank leaks in seconds!*
- *Can be used over and over again!*

Try these TANKIT products too!

TANKTEX — Water finder in oil.

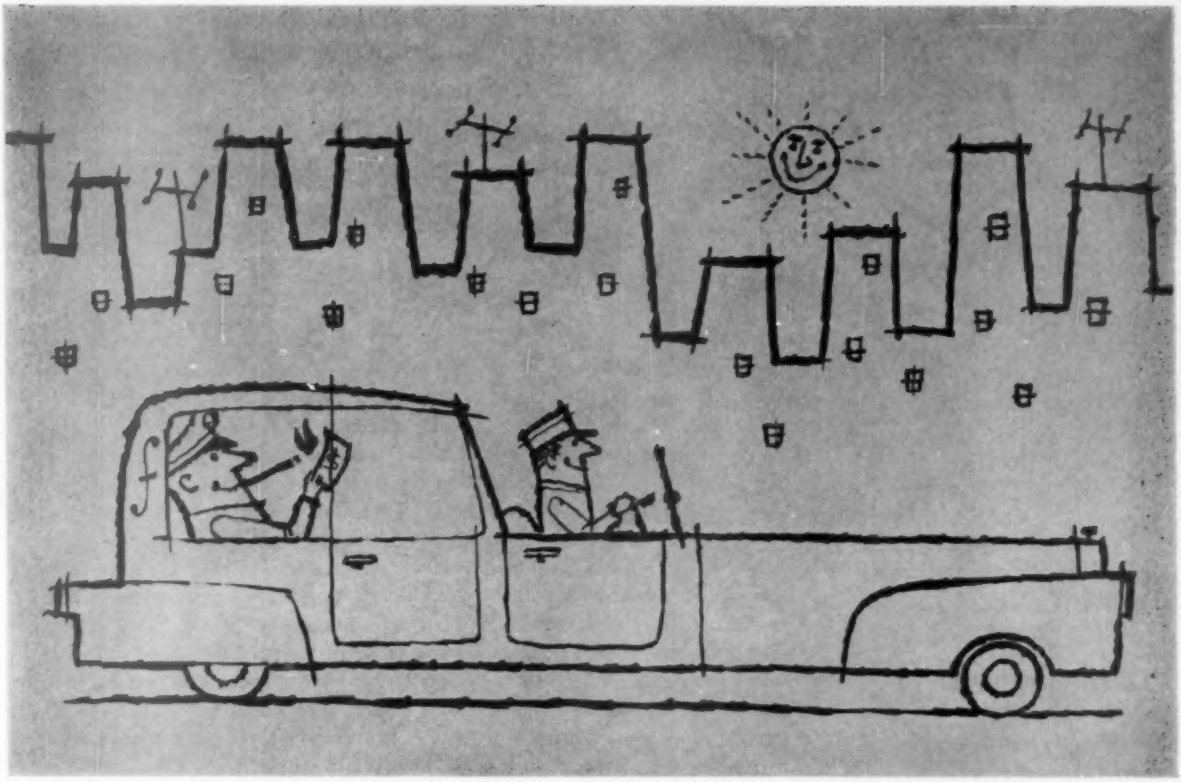
TANKIT — Strap on seal for leaky oil tanks.

EEZ-IT — Heavy duty penetrating oil.

SURGEX — Concentrated boiler water conditioner in small vial.

THE TANKIT CO. INC.
560 BELMONT AVENUE
NEWARK, NEW JERSEY

BUSINESS IS BETTER



WHEN YOU DO BUSINESS WITH COASTAL

"Does the Most for Fuel Oil Dealers"

COASTAL OIL COMPANY

EXECUTIVE OFFICES: 744 Broad Street, Newark 2, N. J.

OIL COASTAL COMPANY

To get Petroleum Products from one place to another **quickly and safely,** get the facts about these exclusive SCULLY developments:

Scully UNIFIL System

VENTALARM Signal
VENTALARM Combination Gauge
SCULLY Tank Gauge
SCULLY Safety Vent Cap

VENTAFIL Portable Fill, Vent and Signal
SCULLY Swivel
SCULLY Nozzle
SCULTROL Pump Pressure Control
THROTLATOR Engine Control
FASFILL Connector

SHURPROOF Tester
FASLITE Torch
SCULLY Electrode Gauge Kit

FAYLSAFE Low Water Cutoff
FAYLSAFE Monitoring System

(All capitalized words are trademarks of Scully Signal Company)

Folders describing any of these products will be mailed upon request.

SCULLY SIGNAL COMPANY

174 GREEN STREET
MELROSE 76, MASSACHUSETTS

Construction has started on the new office building of Petroleum Heat and Power Co. Located in New Cassel, N. Y., the building will house the 140 employees serving 14,000 heating accounts in Nassau and Suffolk Counties on Long Island. Occupancy is scheduled for the middle of April. The company is presently located in Mineola.

Rochester Oil Burning System holds 10-day Jamboree-Clinic

A TEN-DAY clinic and jamboree was sponsored September 26 to October 7 by Rochester Oil Burning System at its Rochester, N. Y., headquarters and Buffalo branch.

The idea was started about five years ago by Irving Koval, who operates Rochester Oil Burning System, wholesalers of oilburner parts and supplies. It began as a one-day affair, the following year was expanded to three-days and has now worked up to the ten-day span over a two-week period.

Purpose of the clinic and jamboree, explains Koval, is to keep his oilheating dealer customers informed about the products he handles and let them get advice on service or other equipment problems from representatives of the equipment manufacturers. Koval accomplishes this by providing each participating representative with a table, where he can display his product, distribute literature and discuss application and service topics. Hours are from 8:00 AM to 5:00 PM.

Koval invites all his customers and distributes schedules which show which products are to be displayed on which days. Many days there will be four different manufacturers' representatives available for consultation; on other days there will be two or three. But the idea is for the dealer to select the day or days when he can meet with the representative who can tell him about the equipment in which he is interested. In addition, the regular walk-in trade is encouraged to visit the displays.

Everyone who does is given a ticket which entitles him to a chance at winning equipment and merchandise prizes.

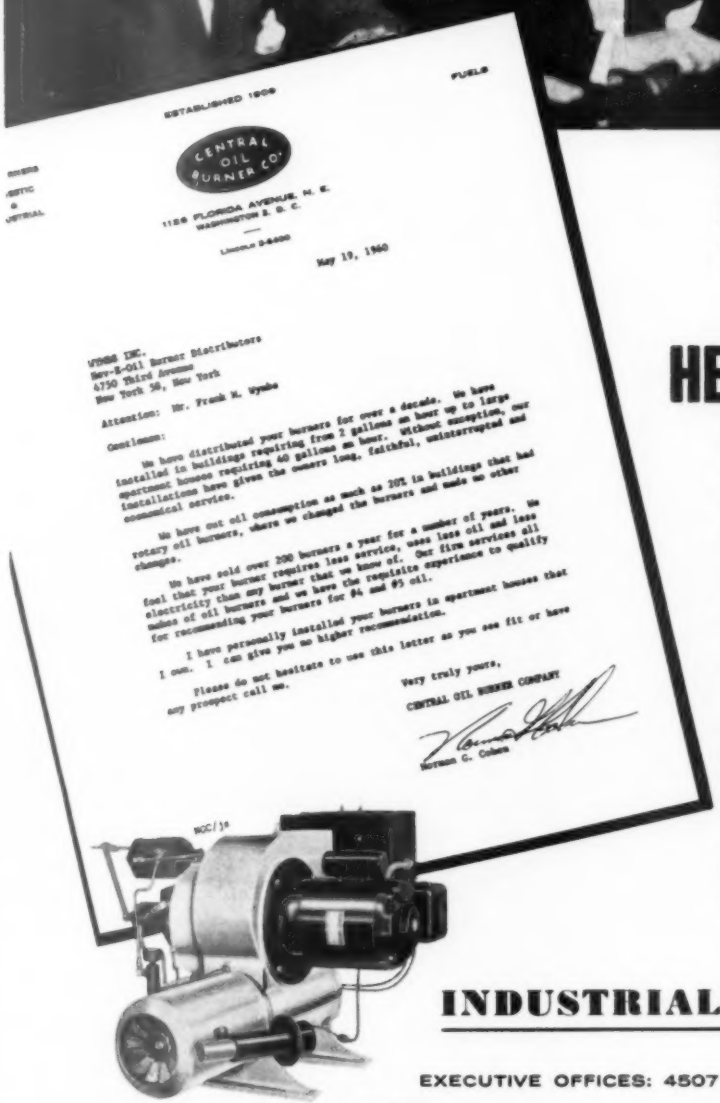
Thirty-four manufacturers took part in this year's program.

Two typical equipment displays at Rochester Oil Burning System's Clinic this year.

EXPERTS AGREE:

"Hev-E-Oil burners require less service, use less oil and less electricity than any burner we know of"

PANEL OF EXPERTS — Established in 1909, Central Oil Burner Company draws on a wealth of oil heating experience. At right is Mr. Norman Cohen, President. In the center is Mr. Kal Steiner, Central's Vice President in charge of engineering and a nationally recognized fuel authority. At left, Mr. S. Robert Cohen, Secretary-Treasurer.



ESTABLISHED 1909 — FUELS

CENTRAL OIL BURNER CO.

1120 FLORIDA AVENUE, N. E.
WASHINGTON 2, D. C.

May 19, 1960

VYNNE INC.
Hev-E-Oil Burner Distributors
6750 Third Avenue
New York 56, New York

Attention: Mr. Frank M. Wynne

Gentlemen:

We have distributed your burners for over a decade. We have installed in buildings requiring from 2 gallons an hour up to large apartment houses requiring 40 gallons an hour. Without exception, our installations have given the owners long, faithful, uninterrupted and economical service.

We have cut oil consumption as much as 20% in buildings that had rotary oil burners, where we changed the burners and made no other changes.

We have sold over 200 burners a year for a number of years. We feel that your burner requires less service, uses less oil and less electricity than any burner that we know of. Our firm services all makes of oil burners and we have the requisite experience to qualify for recommending your burners for #4 and #5 oil.

I have personally installed your burners in apartment houses that I own. I can give you no higher recommendation.

Please do not hesitate to use this letter as you see fit or have any prospect call me.

Very truly yours,
CENTRAL OIL BURNER COMPANY
Norman C. Cohen

NCC/jo

HEV-E-OIL BURNERS

You'll agree with the experts when you see how HEV-E-OIL commercial-industrial burners assure efficient, economical operation — perfect fire control regardless of weather or draft conditions. Low-pressure air atomization is the big secret of success — accurately metered oil and air for the best in economical performance.

If you own, specify, install or service burners, HEV-E-OIL burners will save you money. Ten sizes, 1 to 150 gph. Adapt to all standard heating boilers. Send for free bulletin. Write Industrial Combustion, Inc., 4507 N. Oakland Ave., Milwaukee 11, Wisconsin. Dept. FO-110.

INDUSTRIAL COMBUSTION INC.

EXECUTIVE OFFICES: 4507 N. OAKLAND AVE., MILWAUKEE 11, WIS.

MOORE BROS. OIL CO., INC., MAHWAH, N. J.

"Our sales have increased each year since we started with Texaco 4 years ago. Last year we sold 270,000 gallons of Texaco Fuel Chief Heating Oil. This was 40,000 more than the previous year. We also gained 50 new customers. Fuel Chief is an outstanding product, and Texaco is really jobber-minded. We learned that it pays to sell the best . . . **TEXACO."**

5 reasons why it pays to be a Texaco Fuel Chief Distributor

1. Texaco Fuel Chief is clean-burning.
2. Dependable and efficient delivery at all times.
3. Immediate acceptance. Fuel Chief is sold under the nationally famous trademark, the Texaco red star with the green "T".
4. One of the largest producers of heating oil, Texaco is the only petroleum company to build up successful distribution of its products nationwide.
5. Profitable and proved sales policies.

A promising future is one of the advantages of associating with Texaco. Proof: 842 Consignees and Distributors of Texaco Products have been with us over 20 years, some over 45 years. There may be an opportunity for *you*. Investigate – send this coupon to Manager, Fuel Oil Sales Division, Texaco Inc., 135 E. 42nd St., New York 17, New York.

TEXACO FUEL CHIEF HEATING OIL

FOH-11

I would like complete information about the possibility of teaming up with Texaco as a Distributor of Fuel Chief Heating Oil.

NAME_____

STREET_____

CITY_____

STATE_____

Connecticut Association sponsors management Clinic

A PANEL DISCUSSION on "Fueloil Deliveries at a lower Cost per Gallon" opened the fifth management clinic sponsored by the Connecticut Petroleum Association. The all-day meeting was held at the Hawthorne Inn, Berlin, Conn., October 11.

Moderating this panel was William G. Dixon, Boonton, N. J., and participating were William Bursaw, Jr., Salem, Mass., and T. R. Loizeaux, Jr., Plainfield, N. J.

Covering the topic "Financial Control of your fueloil Company" were Mervin Gray and David Robinson, both of Boston, and George E. Gardner, Levittown, Pa.

William Wildes, Boston, moderated a discussion on "Better Service through better Control." On the panel were Hugh McKee, Boston, and William Kane, Port Washington, N. Y. Final speaker of the day was Calvin D. MacCracken, Jet-Heet, Inc., Englewood, N. J., who spoke on "New oilheating Equipment and the Future of Oilheating."

William F. Briggs, Portland, Conn., was general moderator of the clinic. He is chairman of the Association's education committee. Other members of the committee are Franklin L. Kundahl, East Hartford; Harry Goldfarb, Hartford; Burt Stevens, Waterbury; Sidney Hoffman, Bridgeport; and Russell Lynch, Hartford.

Northern New York Institute hears advertising Reports

THE MODERN Oil Heat Institute of Northern New York, Syracuse, held a meeting north of Hammond, N. Y., on October 19 during which members heard reports of their advertising during the preceding year. Jim Higgins reported on the TV coverage and Bob Eamer gave a resume of the newspaper activities.

Frank Cady, managing director of the Oil Heat Institute of Rochester, N. Y., discussed the activities and attainments of his association.

New York Council sponsors special newspaper Edition

ON SUNDAY, October 30, the *Long Island Sunday Press* published a special tabloid section devoted especially to oilheating. Arranging the special supplement was the Better Heat with Oil Council, Inc., New York City.

The newspaper reaches 391,000 homes in Queens, Brooklyn and Long Island. The section was filled with stories and pictures keyed to alert non-oil users to the carefree home comfort to be obtained through oil heat.

From left to right are T. E. Carson, executive secretary, Oil Heat Association of Maryland; Leonard S. Marshman, Mobil Oil Co., and Jack Wailes, association secretary-treasurer. Marshman spoke at a recent luncheon sponsored by the group and told the 160 oil men present that the general outlook for the heating oil business looks pretty good—"Oil's gains will be modest during the decade ahead but we shall show a gain."

THANKS TO PETROMISER 20

"300,000 gallons in new business in 10 weeks for Chambers Oil Co."

says
John P. Jones, Utica, N. Y.
franchised PetroMiser dealer

"Aside from the technical advantages, PetroMiser 20 fuel oil additive is the greatest business builder we've seen in 27 years of operation."

This sign appears on every Utica Transit bus.

Put YOURSELF in the PetroMiser picture!
Win new customers with PROVEN sales program: FREE Demonstration Kits, ad mats, mailers, ideas galore!

Make FREE PetroMiser TEST now. Start full program this winter. Fifteen gallons FREE to qualified dealers in areas where franchises are open. Write: state gallonage and territory covered.

4 fact-filled booklets on request.
Write Dept. F- 11

STEWART-HALL CHEM. CORP.
MOUNT VERNON, NEW YORK

Officers of the newly-formed Anchorage Fuel Dealers Association are from left to right: Raymond Bilodeau, president; James Medema, secretary-treasurer; and Peter B. Melseth, vice president. All 12 of the oilheating dealers in the Greater Anchorage area belong to the group which is the Alaska Division of the Oil Heat Institute of Washington.

Alaskan oil Dealers form Association in Anchorage

HEATING OIL DEALERS in Anchorage have formed the Anchorage Fuel Dealers Association. This Alaskan group is affiliated with the OHI of Washington.

Members of the association include: Daniel Bailey, Ace Fuel Service; Peter B. Melseth, Artic Fuel & Appliance, Inc.; James Medema, Alaska Oil Sales & Service, Inc.; C. Wesley Heverling, City Fuel, Inc.; George Petrovich, Day & Night Fuel, Inc.; John Malaka, Denali Fuel Oil Co.; Raymond Bilodeau, Inlet Fuel Co.; James L. Slayton, Northern Fuel, Inc.; Tom Newton, North Star Fuel, Inc.; Hans S. Hanson, Spenard Fuel; James Huston, Triple-A Fuel Co., and George H. Catsich, Alaska Fuel & Transfer, Inc.

Eastern Old Timers hold annual Outing

A CONGENIAL GROUP got together on September 22 at the Plainfield (N. J.) Country Club for the second annual Eastern Division outing of the Old Timers' Club.

The official program started with an afternoon of golf and concluded with dinner in the evening. Chairman Charlie Bendix presented the golf trophies and distributed the other prizes.

Tim Loizeaux won the Old Timers' Cup in the golf competition; he gets to keep the cup for a year. Jim Ramsey, who had won the cup at the 1959 outing, received the President's Cup as a permanent award. Jim Meisner won a trophy for low net golf score.

The committee which arranged the outing consisted of Jim McGuire, Jim Ramsey, Ed Grady, Tim Loizeaux and Chris Jensen.

Pennsylvania Dealers form new industry Association

THE PENNSYLVANIA Oil Heat Council has been organized in Paoli, Pa. It will work with the National Fuel-oil Council to promote fueloil as the best heating source.

The campaign will be built around the "Little Bill" character, already used by many similar associations in other markets and originated by the Oil Heat Institute of Long Island. Lee Keeler, Inc., is the group's advertising and public relations agency.

Active officers will include: A. W. Woosnam, Sinkler, Inc., president; Louis F. Funsten, Meenan Oil Co., Inc., secretary; W. B. Canby, Jr., Canby Oil Co., Inc., treasurer; Paul D. Sine, the D. Sine Estate, 1st vice president; James A. Moss, Diamond Ice & Fuel Co., 2nd vice president; and Milton E. Yohn, M. E. Yohn & Son, corresponding secretary. Edward Matson Pond is executive secretary.

Jersey Group holds Meeting ; heating Engineer is Speaker

THE UNION COUNTY, N. J., Oil-Heat Association held its first general meeting of the current season on September 29 in Roselle, N. J.

Guest speaker was heating engineer Wayne Mollineaux, Thatcher Furnace Co., who discussed the three principal heating fuels, concluding with a question and answer period.

HONEYWELL'S NEW C7012A

Ultra-Vision* Flame Detector

senses only the flame!

no more hot refractory hold-ins

USE OF ULTRAVIOLET RAYS REVOLUTIONIZES SAFETY STANDARDS IN FLAME DETECTION DEVICES FOR GAS, OIL AND COMBINATION GAS-OIL INSTALLATIONS

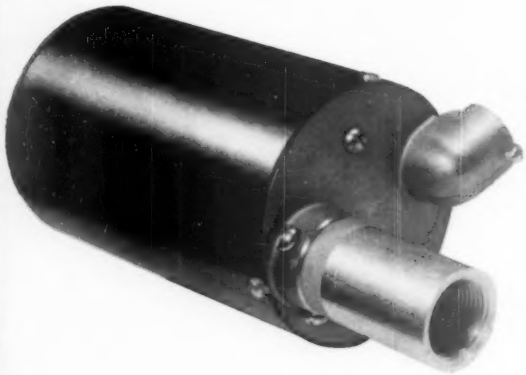
Honeywell's new ultraviolet sensor represents a major breakthrough in scientific flame detection. This revolutionary device employs an amplified ultraviolet signal to positively distinguish between an actual flame (ultraviolet rays) and a hot refractory (infrared rays). For the first time, you can be *absolutely sure* that fuel delivery will be stopped in the absence of flame.

This new control device is compact. It simplifies flame supervision of both single and multiple burners since the Ultra-Vision Detector, not being sensitive to a hot refractory, can be aimed at each individual flame in the most convenient way. This is the only device on the market that offers you this advantage.

Is it economical? Consider this: The amazing new Ultra-Vision Flame Detector will actually pay for itself in simplified installation and maintenance because—

• wiring is less expensive in this system than in a lead sulphide cell • it can be installed easier because in flame sighting hot refractory can be ignored • there is no further need for flame rod replacement.

*Trademark



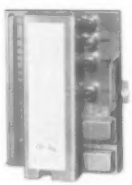
HONEYWELL'S NEW C7012 IS "SYSTEM ENGINEERED" FOR USE WITH ANY 2- TO 4-SECOND FLAME RECTIFICATION RELAY!

The Honeywell Ultra-Vision Flame Detector is designed for safe, foolproof flame detection when used with any of the following flame safeguard relays:

FOR MEDIUM BURNERS—RA890E PROTECTORELAY
The RA890E is a basic rectification relay ideally suited for use with the new C7012A Ultra-Vision Sensor. It's designed especially for pressure-gun oil burners, small combination gas-oil burners and gas-power burners.

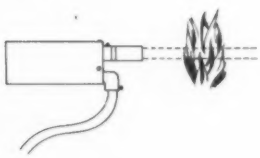
FOR INDUSTRIAL PROCESSING BURNERS AND OVENS—W124 PROTECTOGLO
Provides extended purge timings and cutoff of the main flame. Pushbutton and signal lights are a built-in feature of this system. The Ultra-Vision Flame Detector provides safe, dependable flame detection when used with the W124 Protectoglo.

FOR INDUSTRIAL PROCESSING AND COMMERCIAL BURNERS (requiring manual start and complete cutoff on flame failure)—R485 PROTECTORELAY
Used with the new C7012, the R485 Protectorelay insures trouble-free operation and no "down time"—this system senses only the flame, never a hot refractory. The safety features of the R485 include a warm-up timer, a self-start check and a safe-operation check for immediate shut-down in event of abnormal conditions.

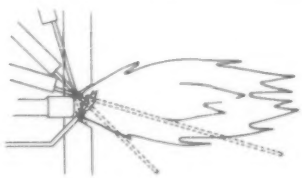


FOR LARGE CONVERSION BURNERS—R478 PROTECTORELAY
Here's an electronic programming relay for large horizontal rotaries, combination gas-oil burners, steam-atomizing burners and large power gas burners. The R478A may be used with the C7012A Ultra-Vision Sensor when burner sequencing is needed.

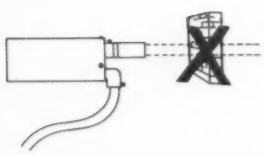
HERE'S WHY HONEYWELL'S NEW C7012 IS SO VERSATILE!



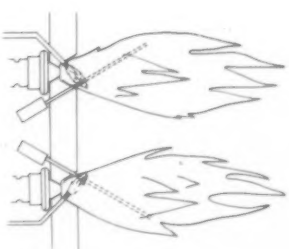
New Ultra-Vision Flame Detector sights flame of all fuels.



New Detector does an effective job on single burner pilot and main flame installations.



C7012 is not affected in any way by a hot refractory.



With Honeywell's new C7012, multiple burner installations can be monitored safely for the first time.

FOR MORE DETAILS, CALL YOUR LOCAL HONEYWELL OFFICE, OR WRITE TO HONEYWELL, MINNEAPOLIS 8, MINNESOTA; PHILADELPHIA 44, PENNSYLVANIA; OR TORONTO 17, ONTARIO

Honeywell

First in Control

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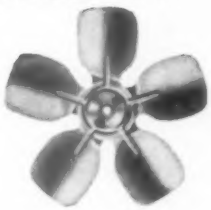
WHY?
Why Does
CENTURY Larco
Manufacturers of the most diversified line of electric water coolers.
use Revcor
FAN BLADES?

because . . .



Revcor One Piece and Price Saver Series Fan Blades are the most economical means of providing quiet air delivery while maintaining high standards of quality and performance.

Revcor Fan Blades are available in 8 types in diameters from 6" to 48". For efficient design, rugged construction, high quality and economy—specify Revcor Fan Blades.

WRITE FOR FREE BROCHURE
or send specifications to

Revcor, INC.
ENGINEERS-MANUFACTURERS
261 Edwards Street
Carpentersville, Ill.

North Caroline Jobbers hear oil-powered Home discussed

CHARLES H. BURKHARDT, managing director, Oil-Heat Institute of America, told the annual fall convention of the North Carolina Oil Jobbers Association that the home of the future may be powered completely by oil.

The group met at the Grove Park Inn, Asheville, N. C., on October 9-12 and heard Burkhardt say: "The homeowner with an oil-powered house need have no worries about severe storms causing pipeline or power line failures . . . every householder would have his own supply of this all-purpose liquid fuel stored right on his own premises; enough, even in an emergency, to last for an extended period."

Oil Equipment Jobbers elect E. O. Habhegger President

AT THEIR CONVENTION in St. Louis, October 16-18, members of the National Association of Oil Equipment Jobbers elected E. O. Habhegger, Philadelphia, president. He had been the association's vice-president and had served three years on the board.

Horace R. Tuller, Columbus, O., was elected vice-president; new members of the board of directors are: Edgar M. Beaver, Charlotte, N. C.; T. O. Bratten, Houston, Texas; Harold A. Coates, Tampa, Fla.; Paul Lanier, Birmingham, Ala.; and R. S. Murray, Jr., El Paso, Texas.

One of the features of the convention was a panel discussion of "The Outlook for oil equipment Jobbers in the Sixties." Moderating the panel was Al Zahl, Minneapolis.

Executive Workshop is held at South Carolina University

A TWO-DAY Executive Workshop was held at the University of South Carolina recently under the sponsorship of the South Carolina Oil Jobbers. This session particularly stressed oil heat promotion and finance.

Bill Willard headed the committee arranging the workshop and among the speakers were: L. T. White, J. B. Shields, L. L. Snyder, J. W. Ragsdale, Ted Albenesius, Jr., A. P. Williams and James H. Austin.

EXCHANGE SERVICE*
SAVES
. . . TIME
. . . MONEY
. . . EFFORT
REBUILT HEATING EQUIPMENT
by Paco INDUSTRIES INC.
ONE SOURCE FOR ALL MODELS AND MAKES

*for wholesalers only

Wholesalers Check These Paco Advantages:—
√ Weekly Pick-Up and Delivery in 7 States
√ One Week Delivery Service Nationally
√ Reduced Unit Cost—More Profit For You
√ 25,000 Ready-To-Ship Units Stocked
√ Precise Uniformity—Rigid Inspection
√ Premium Quality thru Precision Testing
√ Guaranteed

"Specialists in a Highly Specialized Field" has put Paco Industries, Inc., in an enviable position . . . being acclaimed the "Foremost Rebuilders of Equipment for the Heating Industry"

Paco offers a profitable line . . . with unusual customer acceptance. Rely on a single dependable source, with PLUS-SERVICE a bonus . . . get what you want, when you want it!

Recent plant relocation and expansion facilities have opened the door to greater territorial coverage . . . so, additional wholesaler distributorships are now available. It may mean more sales and greater profits for you! Write today for complete information—Dept. WD.

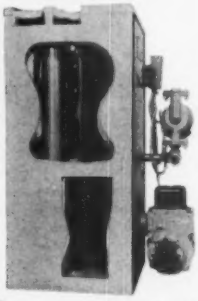
FREE CATALOG . . . 36 pages, listing approx. 12,000 units, is available from your local wholesaler.

AUTHORIZED REBUILDERS OF
CONTROLS - FUEL UNITS - WATER FEEDERS
CIRCULATORS - TRANSFORMERS - GAS VALVES, etc.

Paco INDUSTRIES INC.
463 SOUTH DEAN STREET
ENGLEWOOD, NEW JERSEY

YOUR BEST BUY IS
CROWN
"for the Hottest Heat in Town"

BOILER BURNER UNITS



7 SIZES — 480' to 1830' Completely wired and assembled

FEATURING:
• Minneapolis Honeywell
• Bell and Gossett Pump

620 B.T.U. at 190° Temp.

BASEBOARD RADIATION
Finished in Deluxe White

PKGD. 2 WAYS
1. Economy 8' Lengths
2. Pre-Pak — 3'-4'-5'-8' — no cutting
I.B.R. RATED

OIL FIRED WATER HEATERS
Glass Lined

3 sizes
• 30 GALLON
• 50 GALLON
• 70 GALLON

For The Hottest Price in Town, Write:
CROWN
HOME EQUIPMENT CO.
(Div. of Crown Industries)
1410 N. Delaware Ave., Phila. 25, Pa.

NOTE: SOME TERRITORIES STILL OPEN FOR AGENTS

Waterman Co. Reorganized; to stress product Research

THE WATERMAN - WATERBURY CO., Minneapolis, Minn., has been reorganized. New officers are L. J. Reay, president and treasurer; J. E. Erickson, vice president and chairman of the board; and E. A. Danforth, secretary.

The company's product line has been redeveloped under this new management, and plans for the future include heavy emphasis on the research and development of new products.

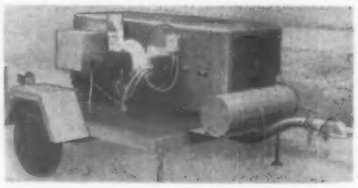
The Waterman Co. manufactures a line of oilheating units and has recently introduced the Comfortrol line which combines separate heating and cooling components in one coordinated zone control unit.

Trailer-Demonstrator made available to Timken Dealers

FULLY WIRED and assembled on a trailer-demonstrator is the FID horizontal furnace made by Timken Silent-Automatic, Cleveland. Available to its dealers and distributors, the demonstrator needs only a standard electrical outlet for actual "in-the-home" operation at the curb, in a driveway or at a shopping center.

Demonstrations can be held under fire because the furnace needs no chimney draft—only a small vent for exhaust. A viewing port is arranged so that each person watching can look into the combustion chamber.

The manufacturer urges the audience to place a white handkerchief



over the vent of the furnace during operation. The handkerchief remains clean and will not burn.

According to Timken, the sales aid has scored one sales closed for every three demonstrations.

Thermo Products announces expanded plant Facilities

THERMO PRODUCTS, North Judson, Ind., has announced completion of a new addition to its manufacturing facilities which will permit the company to increase its storage and shipping facilities and make room for an expanded production area.

The firm manufactures oil-fired winter airconditioners as well as summer units.

Paco Industries, Inc. moves to new Plant in New Jersey

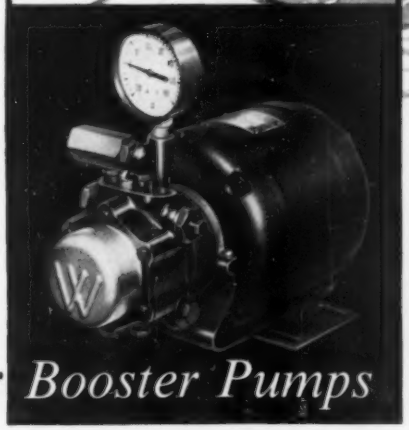
PACO INDUSTRIES, authorized rebuilders of automatic heating control units and many allied products, has moved its plant facilities from Hackensack to Englewood, N. J.

The Englewood plant is completely equipped with new machinery to streamline operations and provide faster service.

Opening day ceremonies were held September 17 with local dignitaries attending. Guided tours were held throughout the plant displaying the new facilities.

Aaron Bloom is president of the company and R. D. Cohen is secretary-treasurer.

YOU FIND THEM ON THE FINEST INSTALLATIONS



Webster Booster Pumps

Where comfort influences sales and production, it's important to select heating equipment that assures uninterrupted service. Especially for overhead furnace installations. Here you can count on Webster Booster Pumps. These dependable, big capacity units were developed for high lift requirements — lift oil 15 feet from a storage tank and discharge it 35 feet or more *above* the pump! Means an ample supply of oil at all times.

Webster Booster Pumps are available in 15, 30 and 65 gph sizes. They're quiet, versatile and serve as continuous or intermittent duty transfer pumps for filling small overhead feeder tanks or for other transfer uses. And, they're equipped with the exclusive Webster rotary filter that ends cleaning problems forever.

Write for Bulletin PU3 - 1 — contains complete specifications and installations data.

HEATING DIVISION

WEBSTER ELECTRIC

RACINE · WIS

NOW IS THE TIME!

TO START INSTALLING SPEED-KLEEN FITTINGS

Your driver now has that extra minute you probably thought he couldn't spare during the peak cold weather. In many instances, all he needs to do is replace an ordinary fill pipe cap with a Speed-Kleen fitting. And thereafter, every delivery will be made easier, cleaner, faster, with delivery costs reduced as much as $5.00 per customer per year.

Deliver more oil with less work —make more profit on every gallon, by using Speed-Kleen nozzle tube and fill pipe fittings.

Don't continue losing profits, write or phone C.G. Eyster at

TIME SAVING FILLS, INC.
Phone York 6119
140 W. Market St., York, Pa.

Sid Harvey salesmen attend sales meeting; Awards made

SID HARVEY SALESMEN held their annual sales roundup in Valley Stream, N. Y., in early September.

Guest speakers were Murray Green, Trageser Copper Works, Inc.; Frank Righetti, Esso Standard Oil Co., and Arthur Ringelheim, Price & Merkur, accountants for the Sid Harvey organization.

That's Steve Harvey, president of Sid Harvey, Inc., at right presenting an award to Gerald Skakal, Sid Harvey of Virginia, the only one to win the Sid Harvey sales contests twice.

The group of 158 salesmen was addressed by the executive officers of the company on new products, new manufacturing methods, diversification, advertising and sales promotion.

A. O. Smith Co. will build advanced Research Center

A. O. SMITH CORP., Milwaukee, Wisc., is planning to build a $2 million research center at Middletown, Wisc. Research activities will start in the new facility by the middle of 1961.

Research in the new laboratories will be devoted to advanced fields in solid state physics and physical chemistry of materials, as well as the energy processes involved in the utilization of such materials. In addition, new product developments utilizing the output of this research will be undertaken.

Honeywell designs unusual Thermostat for new building

AMONG THE UNUSUAL thermostats designed by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., are a

Glass Lined

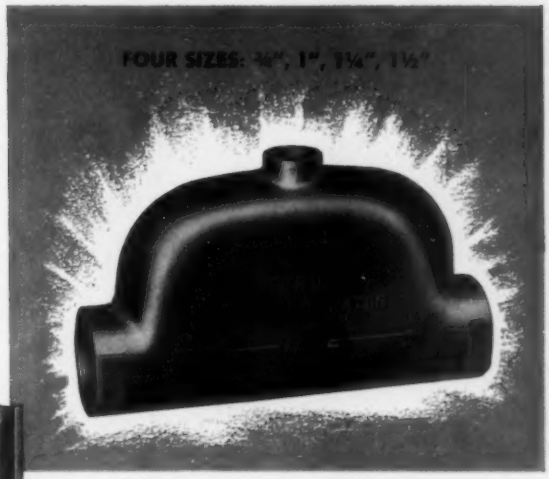
OIL WATER HEATERS

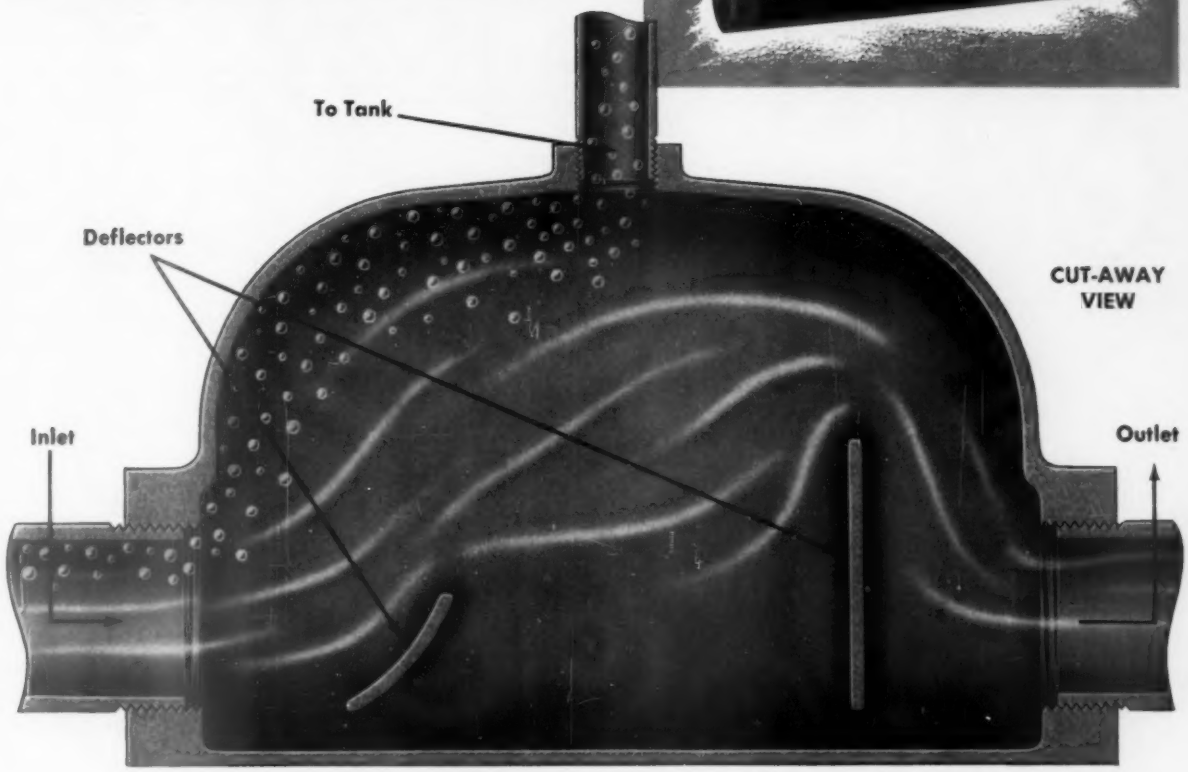
THREE SIZES
30
50
70
GALLONS STORAGE

● A size to meet every requirement. Uses pressure burner, number 2 oil and sells at popular prices. Has every feature for volume sales.
Made in large commercial sizes for schools, hotels, hospitals and public buildings. Approved for 180 degree outlet water.
Details on request.

Bock Corporation
110 S. DICKINSON ST., MADISON 4, WIS.

New!
THRUSH AIR ELIMINATOR





Removes air from Hydronic Systems

THE NEW Thrush Air Eliminator is designed to improve operation of hot water heating plants by removing air from the system and venting it to the pressure tank. This is especially important in modern baseboard heating, but the Eliminator works equally well on convectors and ceiling or floor panel radiant heat systems.

As the cut-away shows, the Eliminator is a one-piece casting with no moving parts. Air is separated from the water by properly placed deflectors and flow pattern. No service required. Install it and forget it. See your wholesaler today or write Department C-11.

Quality Hydronic Heating Specialties

H. A. THRUSH & COMPANY • PERU, INDIANA

fuel oil & oilheat

"Rather primitive heating, what?"

There's no reason to get into a stew over heating problems when you can get all the facts about modern heating practice at the Heating & Air-Conditioning Exposition.

At the exposition you can obtain first-hand information and money-saving tips on new heating equipment as well as the latest developments in refrigeration, air conditioning, and ventilation equipment.

Over 500 fact-filled displays, staffed by top executives and key technical personnel, will provide you with information concerning more efficient methods of installation, maintenance techniques, use of related equipment, and anything they know from which you can profit.

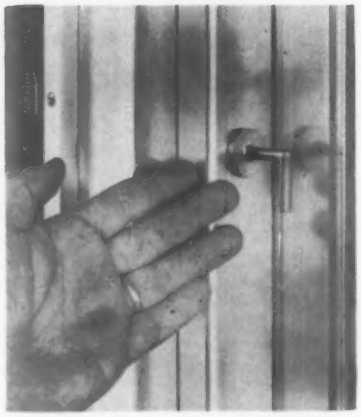
Keep up with new developments for domestic, commercial and industrial applications. *Plan your visit now!*

15th International Heating & Air-Conditioning Exposition

Auspices ASHRAE

International Amphitheatre • Chicago, Illinois
Feb. 13-16, 1961

Management: INTERNATIONAL EXPOSITION COMPANY • 480 Lexington Ave., New York 17, N. Y.



Unusual "inverted coathook" thermostats were designed by Minneapolis-Honeywell to blend with decor of styling administration offices at General Motors' technical center in Detroit.

handful of inch-long L-shaped tubes jutting out from the walls of the styling administration offices at General Motors' new technical center near Detroit.

An electronic sensing element inside the tube reacts to the smallest change in room temperature. Control knobs on a deskside console are used to set whatever temperature is desired.

Two Additions to sales Staff announced by Jet-Heet, Inc.

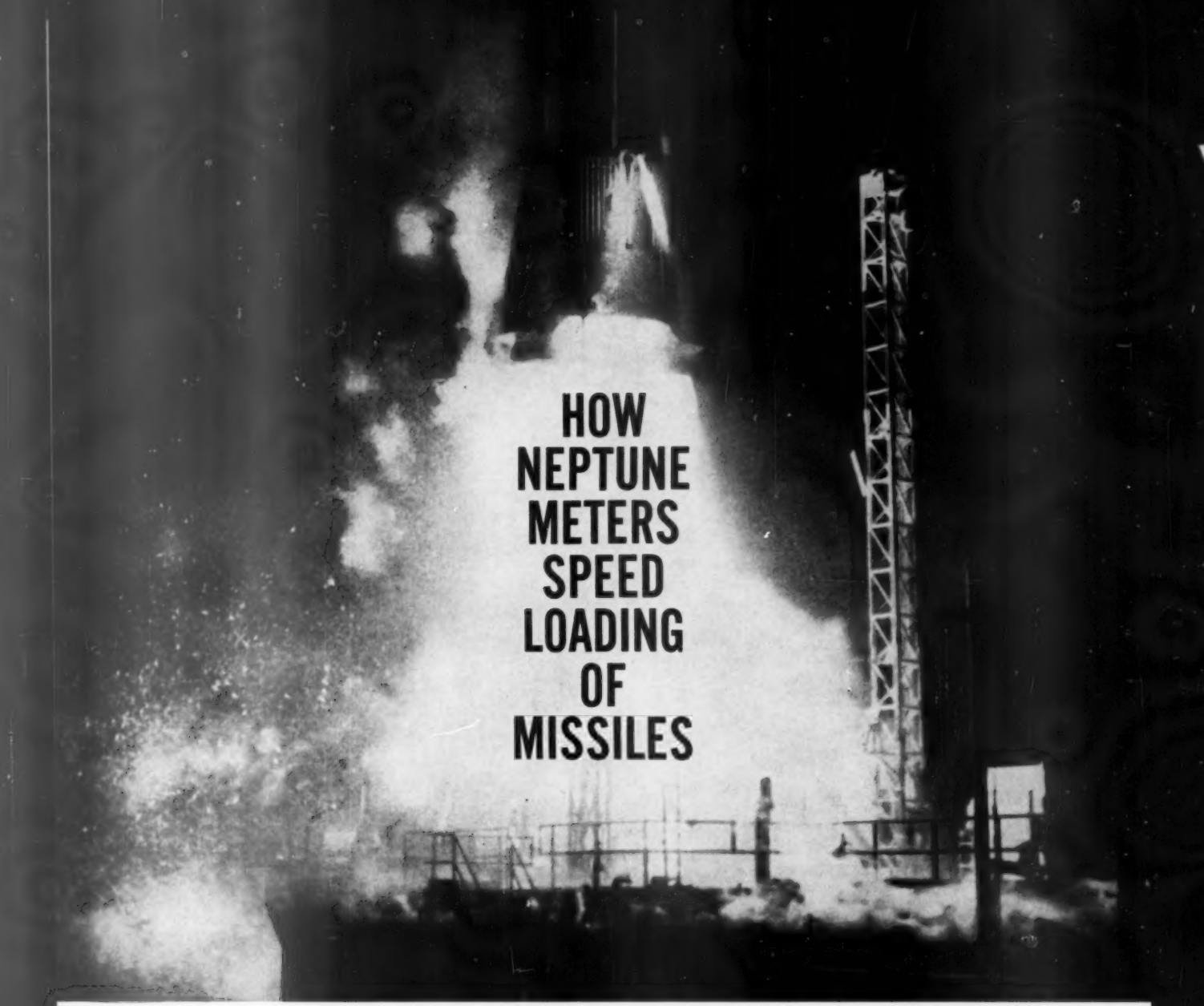
ADDITIONS to the sales staff of Jet-Heet, Inc., Englewood, N. J., for the heating and cooling products have been announced.

Hyman Appleton was named direct distribution district sales manager and will be responsible for all distribution and sales in a 100 mile radius of the Englewood plant.

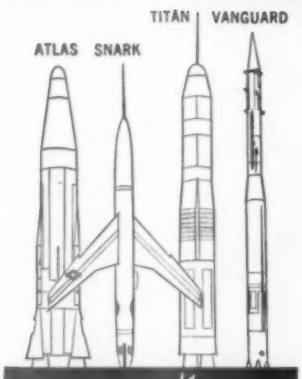
Robert R. Hull was appointed for the Southeast Region, covering the Carolinas, Virginia, Alabama, Georgia and Florida. He will be responsible for sales in the six state area as well as the establishing of a dealer-distributor sales and service program in that area. Both men will work directly under Bob Barr, sales manager.

❖ ❖ ❖

New England Communications, Inc., Wellesley, Mass., has been appointed a manufacturer's representative for Radio Corp. of America, New York, N. Y. The Wellesley firm will handle such RCA products as the new LD-150 transistorized two-way radio.



HOW NEPTUNE METERS SPEED LOADING OF MISSILES



neptune
for a better measure of profit

In the tense moments before blast-off, when the "bird" is being fueled, a Neptune Meter is at work. As liquid fills the missile's tanks, the meter smoothly ticks off every pound. If required, it can shut off the flow at the exact preselected quantity; it can even turn off the pump and light a "ready" lamp.

For fueling-up and other purposes, four missiles . . . Atlas, Snark, Titan, and Vanguard . . . count on Neptune meters for ground support. *Simplicity, accuracy,* and *proved reliability* are the reasons.

The basic meter is exactly the same as those you use on your trucks and bulk plants. These same meters are widely used for metering jet fuels. Because Neptune engineers have been working on ideas for your future, we were able to help solve special metering problems, such as temperature compensation, required for missiles.

Past, present, and future, Neptune is the meter . . . and the meter *company* . . . you can rely on.

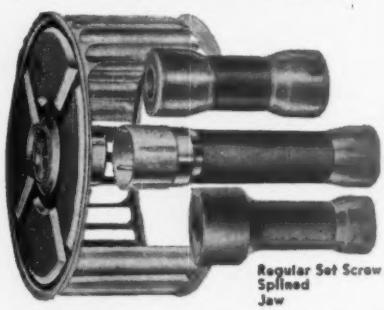
NEPTUNE METER COMPANY
47-25 34th St., Long Island City 1, N. Y.
Branches and Jobbers in All Principal Cities
In Canada: Neptune Meters, Ltd., Toronto, Ontario

LIQUID METER DIVISION

QUALITY is our business .. without *any* compromise

***AND ONLY Guardian* GIVES YOU ALL THREE—**

1. FLEXIBLE COUPLINGS



Regular Set Screw Splined Jaw

Only Guardian gives you these features—

- **ROLL SPINNING**—Exclusive process joins all three components at one time—while in final operating alignment.
- **BRAIDED RUBBER**—Ground to absolute true concentricity. Furnished in BUNA-N TUBE and NEOPRENE COVER. Lateral and angular alignment requirements fully met.
- **ONE-PIECE DESIGN**—Minimizes assembly and handling costs. Made to exact lengths required.

Over 5,000,000 Guardian couplings are on original equipment. This is your assurance of highest quality and universal acceptance in the field.

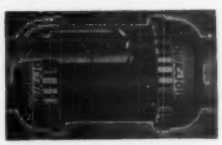
2. OIL TANK VALVES

No. 1910 B

Check These Superior Guardian Features—

- Metal-to-metal seating.
- Highest quality machined bar stock.
- Greater wall and body strength.
- Fusible linkage available in all designs.
- Valve designs for every type of installation.

3. QUIK JOINT



Steel compression fittings for connecting steel pipe.

Patent No. 2,685,460

- Eliminates threading of pipe.
- Decreases cathodic corrosion and electrolysis.
- Guaranteed for pressure up to 2000 P.S.I.
- Allows 7° angular deflection.
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Write for free descriptive literature.

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COUPLING DIVISION

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MICHIGAN CITY, INDIANA

Two Westchester (N.Y.) Dealers to use Computer for Accounting

TWO WESTCHESTER COUNTY (N.Y.) fueloil dealers are using an IBM 650 electronic computer for degree-day scheduling, routing and customer billing. The automatic operation will be performed on a contractual data processing basis by The Service Bureau Corp., an IBM, subsidiary, for Sentinel Oil Co., New Rochelle, N. Y., and Maue Oil Co., Ossining, N. Y.

The system itself evolved from studies undertaken over a two-year period by the Service Bureau Corp., Sentinel, Maue and the Oil Heat Institute of Westchester County. The arrangement —actually it is a pilot program—eventually aims to eliminate completely office degree-day calculations and conventional bookkeeping routines.

Weather statistics, previous delivery information and the homeowner's average fueloil use are fed into the computer and the data are used to schedule the time for delivery. Automatically-prepared delivery tickets are sent to each dealer; the dispatcher makes the final decision on delivery to the home.

Next, metered deliveries recorded by the driver when he fills the customer's tank are reported to SBC's office in White Plains, N. Y. Data processing machines then prepare monthly statements, invoice registers, accounts receivable and sales statistics, complete budget accounting functions.

Further, the computer will recheck and adjust "K" factors after each delivery.

Both dealers involved are approaching the plan cautiously but confidently. For example, Thomas A. Brown, president, Sentinel Oil, says: "If the degree-day scheduling is as successful as we expect it to be, we'll have a more accurate method of delivery than ever before. We don't know what our break-even point is, as yet, but we hope to profit by freeing our people for sales work and tighter cost control." Sentinel has an annual retail volume of 8 million gallons.

W. Gregory Maue, Jr., president, Maue Oil, observes: "We now can take advantage of accounting methods that bigness can do more effectively and still retain the personal approach of a small company. We are convinced that this type of thing has to be done by smaller oil companies if they want to maintain their competitive standing." Maue's annual retail volume totals 5,250,000 gallons.

Fueloil delivery schedules are prepared on this 650 computer.

Cities Service Heating Oil is QUALITY CONTROLLED Every Step of the Way

With the most advanced research techniques . . . from ultra-modern refineries . . . right to the distributor, Cities Service Heating Oil is processed under strict quality control. The quality of Cities Service Heating Oil is always the same, never varies from delivery to delivery.

Because Cities Service Heating Oil is fully inhibited against sludge, it burns cleaner and prevents clogged nozzles. Customers are more satisfied. Cities Service Distributorships are profitable, since constant quality control keeps service calls to a minimum.

Call your local Cities Service office and learn the advantages of being a Cities Service Heating Oil Distributor. Or write: Cities Service Oil Company, Distributor Sales Dept., Sixty Wall Tower, New York 5, New York.

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QUALITY PETROLEUM PRODUCTS

THIS COMPLETE LINE IS YOUR STREAMLINED BUSINESS OPPORTUNITY!

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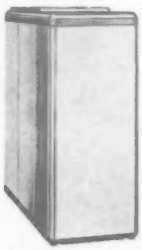
GAS FIRED

Horizontal — low and compact, assembled and wired — 80,000 to 140,000 Btu input.

Upflow — Compact, completely assembled and wired units — 75,000 to 200,000 Btu input.

Counterflow — Completely assembled and wired — 75,000 to 150,000 Btu input

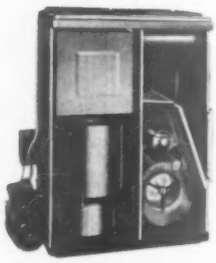


Basement — Gas or Oil Fired packaged, easily assembled — 105,000 to 260,000 Btu (Gas) — 84,000 to 192,000 Btu (Oil).

OIL FIRED

Horizontal — Heating element, blower and motor assembled in casing — 89,600 to 224,000 Btu output.

Upflow — Assembled and Wired Units with refractory Firebox — 78,400 to 112,000 Btu output.



Basement — Heavily constructed, assembled and wired — 84,000 to 112,000 Btu output.

If you have been paying the penalty of a big stock and heavy indebtedness in order to get the "direct" price, see what your Luxaire jobber has to offer you!

His price on every unit in the complete Luxaire Line always is competitive. And while it may sometimes be a little bit more than a "direct" price, your Luxaire jobber carries the stock, delivers the units when you need them and backs them with service!

In other words, he is the wholesaler — not you. And your long-run cost for his wholesale service can be *much less* than when you try to do it yourself!

Furthermore, the complete line of excellent, heavily constructed Luxaire Units with which he supplies you are *really competitive* in price, and still have the advantage of wholesale service, because Luxaire's advanced production methods reduce manufacturing costs!

Check your *real* costs and see how much *more* it may be costing you to buy "direct". Then see your Luxaire jobber, today!

PLUS — COAL FURNACES • UNIT HEATERS • CONVERSION BURNERS • AIR CONDITIONING

Coal Furnaces 3 Winter A. C. Sizes. 4 Gravity Sizes.

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(1) 2, 3, 4, 5 H.P. Air Cooled Condensing Units, (2) Plenum Evaporator, (3) Duct Evaporator, (4) Counterflow Evaporator, (5) Blower-Evaporator Unit.

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THE Luxaire® C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

EIGHT DEMONSTRATION SET-UPS SHOW FLORIDA FUELOIL CUSTOMERS HOW TO

Heat with Oil in Winter

cool with Oil in Summer

A YEAR-ROUND airconditioner powered by fueloil in summer as well as in winter was displayed for the first time last April—at the oil heat and airconditioning exposition which was at the Coliseum, N. Y. The new unit bore the same Arkla-Servel Sun Valley all-year oilfired airconditioner.

Its manufacturer, Arkla Air Conditioning Corp. announced that it was made in two sizes. Model 500-FO is fired .57 gph for refrigeration to provide summer cooling; its delivered capacity is 42,000 Btu per hour for cooling, or 3½ tons. Model 750-FO is fired .86 gph to provide summer cooling; capacity is 60,000 Btu per hour for cooling, or 5 tons.

For heating in winter, both models are fired at .86 gph, which provides 96,000 Btu per hour bonnet capacity.

Arkla's announcements described the Sun Valley unit as essentially an oilfired version of Arkla's gas-fired airconditioner, which had been in production for four years.

The big difference is that an oilburner has been substituted for a gas burner in the unit's generator. In this generator, heat from the oil flame boils a refrigerant solution (a solution of water and the salt lithium bromide) to gain both the cooling action in summer, and the heating action in winter.

Year-round Unit

The Sun Valley unit is a year-round package, which provides both heating and cooling from one single-coil, direct-fired, absorption system. This operates under a high vacuum at all times, and of course is a factory-sealed unit.

In his announcement of the new, oil-powered Sun Valley unit, last April, sales manager William G. Wepfer declared the Sun Valley then was a proven airconditioning system. He said that 23,000 gas-fired units of this kind had been installed since their introduction in 1956, and that the cost of service and replacement parts, exclusive of routine maintenance, amounted to less than $5 per unit per year.

The unit can operate at nearly all outside temperatures without requiring supplemental heat or energy.

Oldtimers in the oil heat industry know that the Servel domestic gas-fired refrigerator, also of the absorption type, gained popularity and respect for itself in many cities starting in the early 1930's. Its little, silent, gas flame powered the refrigeration system that produced ice cubes and kept the stored food amply cold.

The successful use of the absorption refrigeration principle in Servel refrigerators over the years is certain to influence the thinking of men of the fueloil and oilheating industry who are trying to forecast to what degree this refrigeration principle, coupled to oilfiring, may become popular for both oilheating and oil-cooling of homes and business buildings.

Direct Action

Certain men of the industry, however, proved that on this new development they are more than thinkers, ponderers, and forecasters. These men, all members of the Better Home Heat Council of Florida (an organization formed in recent years to advertise oil heat and the use of fueloil), went into very direct action.

Working cooperatively according to a plan, these men arranged for their companies to install oilfired Arkla-Servel oilfired units. There's no more practical and hardheaded way, of course, to learn how these units operate in the field—than to study them in operation on typical installations and on installations that put them to severe tests through overloading them or otherwise working them disadvantageously.

Executives of companies handling fueloil, and of companies handling fueloil and oilheating equipment (all of these companies are active members of the Better Home Heat Council of Florida) arranged for the installation by their companies of eight of these oilfired Arkla-Servel units. All eight are in operation now; some have been in operation for as long as seven months, and one or two were installed only in recent months.

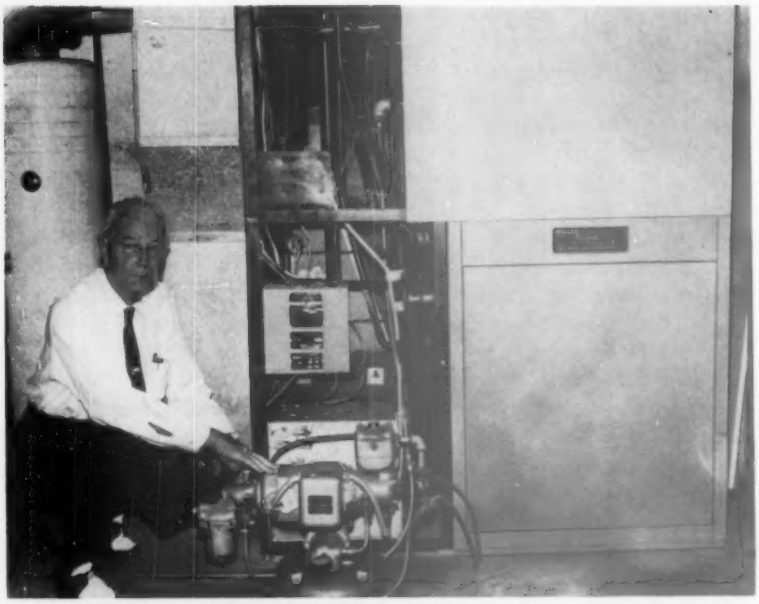
Only one of the eight units is in the home of a customer, to whom it was sold in the usual way to summer-winter aircondition his home. Seven are working to aircondition offices and headquarters of the fueloil companies studying their operation, or are in the homes of owners of these companies.

Operating Systems

Because FUELOIL & OIL HEAT decided that firsthand information on the performance of these units should be obtained and promulgated, your reporter (a member of the technical staff of the magazine) made a trip to Florida to see the eight units. Seven were in operation when he saw them. The eighth, a new kind of oilfired Arkla-Servel unit, quite different from the other seven, was almost completely installed, but was not yet in operation.

Reggie Moffat is one of the mainsprings behind this whole idea of field-testing and field-studying these oilfired Arkla units on actual installations. He serves as general manager of L. A. Johnson Fuel Oil Company, Orlando, Florida. He serves as chairman of Florida's OHI committee, and as president of the Better Home Heat Council of Florida, at which he and L. A. Johnson worked hard organizing.

Reggie Moffat and Charles Wood, Jr., have been collecting data on the summer performance of a 5 ton Arkla unit (Model 750-FO) that's been airconditioning and cooling the offices



Arkla oilfired year-round conditioner (top) installed in home of U. W. Cunningham, president of Cunningham Oil Co., Daytona Beach, Fla. At the left Cunningham looks over the cooling tower needed to work with this 3½ ton unit. Located behind the house, it has two water-circulating lines to connect it to the oilfired unit installed in the basement.

and headquarters of the L. A. Johnson Fuel Oil Company throughout the past summer.

Their data are especially good because their Arkla unit is served by its own, individual electric meter to provide accurate figures for the electricity it uses.

Their thumb-rule data boil down to this: for each hour the Arkla unit is cooling the office building during typical summer weather in Florida the cost of fueloil is a fraction of a cent above 8¢; cost of electricity is a fraction above 3¢ per hour.

Firing .86 gph, the burner does not run continuously on the above basis; its summer-cooling room thermostat turns it on and off. The price of No. 2 oil is figured at 15.6¢ per gallon, on a basis for a customer who uses oil on a "commercial and year-round basis."

This unit uses electricity paid for at a rate uncommonly high for this country, because a commercial user of electricity is penalized considerably in this city through paying heavy on a demand basis.

Working at summer cooling, this Arkla unit employs four electric motors: 1) a motor circulating air through the conditioner and the ducts, in the fashion usual for a forced-air system; 2) an oilburner motor; 3) a water-pump motor serving the cooling tower located outdoors; 4) a fan motor serving the cooling tower, driving the fan that flows outside air through the tower to lower the temperature of the water passing downwards within the tower.

The first motor, circulating air within the building, may operate continuously in summer, if continuous air circulation is desired. The other three motors will stop if sufficient cooling of the building causes opening of the circuit of the summer-cooling room thermostat.

The operation of this system, cooling the offices of the oil company in summer, has been highly satisfactory. The operation of the gun-type oilburner firing the unit has been excellent—just as can be expected of a modern burner. On one occasion, the air filters in the Arkla unit proved they could not be forgotten entirely, proved they needed periodic attention they were not getting. But that was a small and routine matter. On another occasion, a large water strainer in the bottom of the cooling tower plugged . . . also a small matter which demonstrates the need for a small amount of routine attention.

The oilfired refrigeration system cooling the offices of the Johnson Company does give out a gurgling or percolating sound that attracts attention when the Model 750-FO is being fired. On this installation, this sound is unimportant; office workers are not close enough to the unit to hear the sound. In a home with occupants close to the unit, especially sleeping at night, the sound could be a nuisance . . . unless building construction by chance or by design blocked the travel of the sound.

Smaller Unit

Cunningham Oil Company, Daytona Beach, Florida, is a distributor of Gulf products, and has U. W. Cunningham as its president. He had the smaller, 3½ ton unit, Model 500-FO installed in his home, which is two-story and 28 ft. by 40 ft. He explains that he didn't have room enough to move in the 5 ton unit, which he preferred for the job.

For the summer months, his oil consumption has averaged 13.46 gallons of No. 2 oil a day. Cunningham reports that during typical summer weather, not on hottest days, usually his oilburner runs 15 minutes, then stops 9 minutes, in cooling his house. On the day your reporter saw the installation, while he was there the burner seemed to run continuously, keeping the house at 72°F. while the outside temperature was 90°F.

The only complication on the Cun-

ningham installation had to do with the installation men's learning that they had to follow the manufacturer's instructions setting up the job. A certain water-line valve, controlling rate-of-flow of water through the cooling tower, could not be left out. Certain baffles were needed over the oil flame. The mistakes the installation men made were small, of the kind that may be expected from time to time, and easily corrected.

On this job, cold-air ducts located in the garage, which of course is not air-conditioned, were thermally insulated in a highly effective manner.

At the offices of another company, Ad's Everbest Fuel Oil, Inc., in Clearwater, Florida, a 5-ton Model 750-FO Arkla unit is at work cooling and heating the company's headquarters. Joe Hunter and John H. Williams, executives, have gathered the following facts:

Serving either a residence or an office building in their climate, such a unit can be expected to work at cooling for a total of 2,000 to 2,500 hours during a five and a half month cooling season. Their unit uses about 3.9¢ worth of electricity per hour it operates—as the average for the season; here, the electricity cost also is exceedingly high . . . amounting to about 4¢ per kilowatt-hour for the power that goes into this unit. Operating on fueloil, these men conclude, their unit saves about 10¢ per hour over the cost of operating a same-capacity unit having a conventional compressor driven electrically.

The fueloil consumption at Ad's Everbest Fuel Oil Co., Inc. (for the 5-ton unit cooling the offices) has been, in gallons: April 116, May 132, June 139, July 157, August 163, and September 152.

Cost of make-up water, used by the cooling tower, is about $2.70 per month.

The one fly in the ointment on this job has been, oddly, trouble with the float-valve in the bottom of the cooling tower. It's trivial, but it has continued . . . probably because no one has buckled down to ending it, because there was a hope that the float-valve, which fails to close absolutely tight, might get better of its own accord. If this detail is the only trouble with such a system, that speaks well indeed for the overall dependable operation of the equipment.

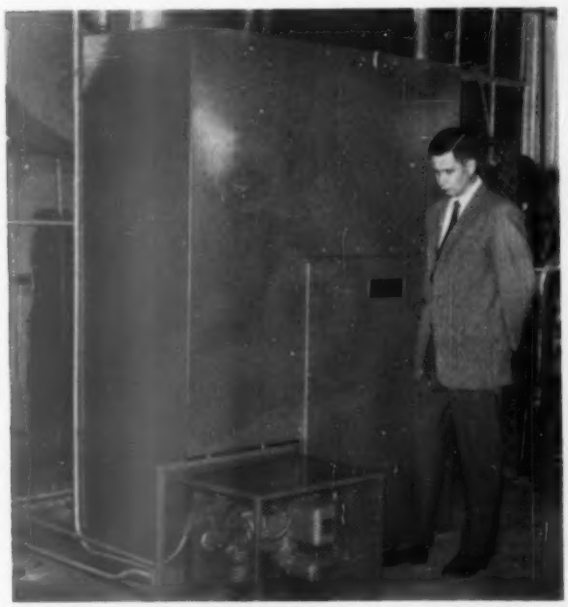
John H. Williams, of Ad's Everbest Fuel Oil, Inc. proves level-headed and practical in discussing the future of this type of oilfired refrigeration system in different parts of Florida. He covers many important aspects. One has to do with low dump-rates for gas in summer in certain areas, which can make gas a worthy opponent to oil on a basis of Btu's per dollar on either fuel.

John C. Kirkpatrick is the owner of Southside Fuel Oil Co., Inc., Jacksonville, Florida. Compared to most Florida fueloil companies, this organization has much more to do with installing and servicing oilheating systems, cooling systems, and year-round systems. With a staff of 40, it is large and competent. Kirkpatrick started in fueloil and heating equipment in 1946, and has been doing extensive airconditioning work since 1956; he has his own sheetmetal shop.

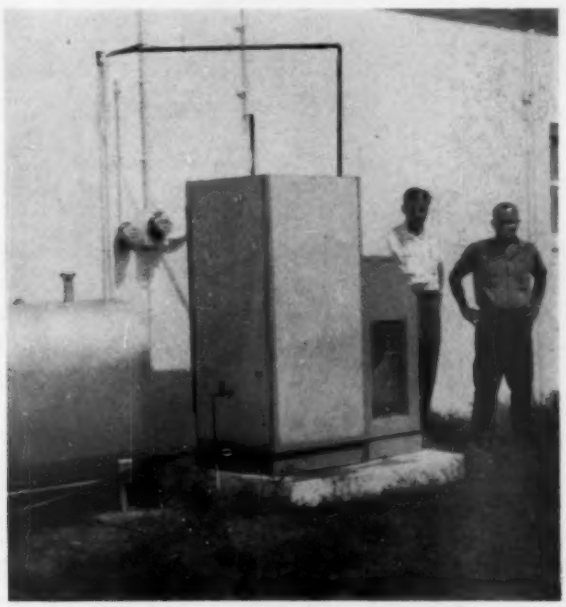
Sizing up oilheating in his area, Kirkpatrick declares about 40% of the oilheated homes have vaporizing equipment and 55-gallon oil drums for storage. 20% have vaporizing equipment and larger storage, 100 or 110 oil tanks perhaps. 40% use No. 2 oil in central heating systems.

His organization operates nine fuel-oil trucks, four sales cars, seven panel-body service trucks, and seven installation trucks.

That background of business operations, and his own experiences in heating and cooling, give John Kirk-



Left: E. B. "Joe" Porter with the 5-ton Arkla unit serving St. Petersburg headquarters of the City Fuel Oil Co., of which he is president. The cooling tower for this job is installed inside the company garage instead of outdoors where most are.



Right: Joe Hunter and John Williams (right), manager of Ad's Everbest Fuel Oil, Inc., Clearwater, examine the cooling tower and oil tank which serves the Arkla unit that airconditions the company offices and showrooms year-round.

Anthony Wilhelm, left, sales engineer of Southside Fuel Oil Co., Inc., Jacksonville, and service manager Lester Roberts inspect Arkla Model 500-FO installed in customer's basement. Right: Cooling tower behind the same house. As the text explains for summer cooling the four motors of the Arkla oilfired summer-winter system are in operation. For heating, the water-circulating pump serving the tower and the tower's fan motor are kept idle. Just the burner and the duct-air circulating fan provide heat during the winter.

patrick's words some weight when he speaks of the Arkla 5-ton Model 750-FO he installed to aircondition his offices and show rooms, previously served by conventional, compressor-type summer cooling equipment.

The load is great. There's 2,400 sq. ft. of floor area; for the peak load in the afternoon, sun heat beats on 400 sq. ft. of glass windows facing west.

Last summer Kirkpatrick reports, the electric compressor-type airconditioning system serving his offices and show rooms used from $51 to $53 worth of electricity per month. A separate electric meter served this equipment, and now serves the Arkla unit . . . which this summer used $17.05 worth of electricity in July, for example, and $17.59 worth in September.

Summer oil consumption for the 5-ton Arkla unit was, in gallons: July 233, August 257, and September 245. Oil cost can be figured as 15¢ per gallon.

Cooling more space, carrying more load, than the electric compressor-type unit carried last year, the Arkla unit really is overloaded; its room thermostat seldom stops it on summer days, though the conditioned rooms are kept comfortably cool. Taking a beating of overloading, the equipment shows no signs of distress or trouble resulting from this.

The Arkla cooling system is used about 23 working days a month. Turned on at 7:00 AM on these days, and off at 6:00 PM, it simply runs at full capacity all day; its room thermo-

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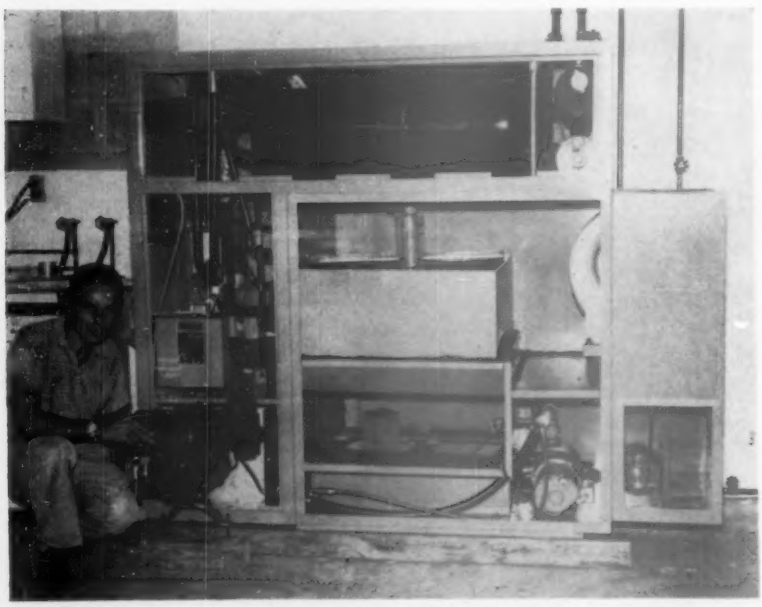


Installation of this new kind of Arkla-Servel unit is just being completed in the home of L. A. Johnson, owner of L. A. Johnson Fuel Oil Co., Orlando. Not yet in production but in the final stages of field testing, this is Model 500C-FO, an oilfired combination chilled-water (summer) and hot water (winter) unit. Its integral circulator sends chilled water to an air-chilling, duct-located finned tube unit in summer and sends hot water to this unit in winter. A Winkler low-pressure oilburner fires this unit. In Florida, on all installations the same gph firing rate is used in winter and summer. The unit shown above has an integral cooling tower, designed for outdoor installation.

Oilheating New York's Bedrooms

Fairfield County, Conn., goes in to Work on the 8:11 Home on the 5:32

IT WAS IN THE September 13 issue of *Look* magazine that we learned something more about the Home Oil Co. of New Canaan, Conn., brief as the item was. That issue told many aspects of New England life including one article by Ken W. Purdy, titled "Is Fairfield County a Part of New England?" His point of course was that it had more of a New York influence, being one of the city's plush bedroom suburbs.

In his pleasant rambling yarn about the amenities of that suburb he had this item, "The pampered resident of Fairfield County can summon almost any professional aid, from a baby sitter to a harpischord restorer, once he has learned, usually by word of mouth, the right number to call. The calamity that will most speedily unhorse and most nearly unman the exurbanite is any malfunction of his oilburning furnace in winter. One Fairfield County firm, the Home Oil Company of New Canaan, frequently awes newcomers, long cowed by surly New York plumbers, by the eerie celerity with which its radio-summoned operatives arrive, and the apparently genuine good cheer with which they will wade into a flooded cellar at two in the morning."

The item brought a lot of calls from Home Oil customers and it was actually a surprise to the company men. Purdy, it turned out, an oil customer, took that tack to thank the service department for nice treatment.

Then in a summer issue of Gulf's magazine, *The Flame,* was a story about the Home Oil new office building and showroom, quite a rich affair. With this much special publicity the editor made it a point to stop by New Canaan for a visit at the first opportunity. That's all that was in mind, sort of a curiosity visit, but there's always a chance to run into some nuggets of "how to" material in a firm so well regarded and having some 16,000 customers in two counties. And so it turned out.

The visit was with Peter Daub, president, Michael Muchinsky, vice-president, and Milton Fitch, Jr., sales manager.

Most of the details of the Home Oil Co. operation would be matched in quite a number of the finest New England fueloil distribution firms. Besides the home base at New Canaan there are three other Home Oil companies located in Danbury, New Milford and Washington, Conn. They're subsidiary corporations with the town name injected, such as Danbury Home Oil Co. In the past two seasons the net increase in oil customers has been 2,800, a fourth of them through new equipment installations, the balance mostly by absorbing smaller operators.

In getting the new equipment business, Home Oil cooperates with a number of heating dealers in addition to its own direct sales. It has two full time professional engineers, one a wet heat specialist, the other featuring warm air. For the dealers they provide free layout and estimating service, often help close the better quality sales. Then there are 10 full time Home Oil salesmen principally for oil but they sell the heating items too, including—no less—a line of LPGas appliances for rural trade.

A few more background impressions before we come to the two significant items that we explored . . .

The heating equipment featured is Lennox, Bethlehem Dynatherm boilers and Jet Heet. Sales Manager Fitch says they can always sell a Lennox job for warm air if the prospect will give them time for a full demonstration and can afford fine work. They have installed two Jet Heets, sold 10 more and think they have a good future. Besides these branded lines they have lower priced boiler and warm air units with their own private label. Many of the homes are deluxe . . . 150,000 Btu jobs are average, 300,000 not uncommon.

Service trucks all have radio phones; in fact all billing is actually done from the radio call-ins after each job. Service contracts with parts are $33; annual overhaul separately is $18; minimum call charge is $5. There are 120 vehicles of all types, including 43 oil trucks. Such a company appraisal is easy to make because it would be hard to find anything to improve very much.

But the two items of special interest uncovered were first, the phenomenal success in water heater sales, and second, the impressions of equipment subsidy becoming quite noticeable in

Peter Daub (seated) heads Home Oil; Michael Muchinsky is vice president.

What should it cost...

For all the hot water you want-

whenever you want it-no waiting?

For a constant supply of hot water, without waits between baths, showers, washer loadings, etc., our OIL POWERED AUTOMATIC WATER HEATER out-performs all other methods — gives you the most hot water for the least cost.

But don't take our word for it!

Prove it to your own satisfaction. Make your own estimate on the chart below:

COMPARATIVE COST CHART

Three thousand (3,000) gallons of hot water a month will amply supply the average family of four with all the hot water demanded for modern living standards:

To heat these 3,000 gallons requires:

(1) 40 Therms* of gas - - - - - - - @ ..... $.....

(2) 800 Kilowatts* of electricity @ ..... $.....

(3) 30 gallons of fuel oil - - - - - @ ..... $.....

Note: At 15c a gallon for fuel oil your total month's cost is $4.50.

**Use Your Local Rates for Gas and Electricity*

Phone Home Oil Co. for an estimate

WO 6-2681

Without cost or obligation, let us tell you what it will cost to install this modern oil-powered hot water heater . . . get all the hot water you want at Big Savings.

NO DOWN PAYMENT — TERMS UP TO 5 YEARS

GULF SOLAR HEAT heating oil

for the FINEST FUEL OIL and SERVICE

The HOME OIL CO.

17 Pine St., New Canaan

the market. To reverse those, we'll look at the subsidy first because it's shorter.

Paying something to get oil business, either directly or indirectly, is not new, but there seems a sort of revival of the practice. In the Pacific Northwest they have a big campaign and it may be that the publicity from there has sparked other approaches.

The first item mentioned by Daub and Muchinsky is the competitive practice of giving either three or five years free service on new installations as long as the oil account is held. Also this is the period of equipment payments. Certainly there would be little problem here if a modest reserve is set up to cover possible costs. The main surprise is that it's done in such a posh community, but they are fighting hard against gas and electric heating. On the other hand, it has often been shown that a fueloil account is worth a capital investment of $75, however you spend it.

Then a number of the companies have taken to furnishing free tanks, completely installed, to get builder accounts. These again represent about a $75 cost, and are given in the sense of equalizing the gas utility's practice of a free supply line in the street and to the house.

Meeting the Competition

A third practice was a single instance to offset the proposed extension of gas lines into a district free of gas up to that time. One oil company gave a builder in the district a straight $100 a house cash subsidy to install oil heat, again in the spirit of matching the free gas lines that were offered.

All of these practices are simple business expedients and probably orthodox under the circumstances, yet finding them in Fairfield County shows that there may be more rather than less of them in the industry's future.

The strongest impression gained on the Home Oil visit was that the company has had fine success in selling water heaters, mostly to its own oil customers . . . 1,328 of them in the past three seasons. Their methods would work in a lot of places. Each water heater account takes an extra tankful of oil a year or increases the customer's volume around 20%.

Fitch explained that some oil companies have tried water heaters and dropped the effort too soon when orders didn't pile in at once. He found that it took about nine months of promotion and local advertising to get folks to even think of oil for water heating. Then came the break-through and good going ever since. Today the customers often sell each other, once they have found through experience that oil does provide lots more hot water at low cost.

Servicemen sell

An interesting approach to selling their own fueloil customers was through the service department. On every service call the man checks a series of squares on the work ticket showing certain characteristics about the equipment, including of course the method of water heating. Where it shows electric heating for this purpose, a direct mail series is started and salesmen are alerted.

With electric rates of 1½¢ a Kwh, water heating costs about $10 a month for a typical customer, much more in the large homes of the district. A 130 gallon per hour water heater can be installed for $285, or 36 payments of $9.40. The oil will cost about $4.50 a month, so the combined outlay of $14.00 a month in the first three years compares to the electric current cost of $10 . . . but there will be much more hot water at any hour. If they want to keep the cost still lower the company will handle a five year payout and then there is little difference.

Because the officials of Home Oil are active in many civic doings, they get quite a lot of publicity in the newspapers of their several towns. Fitch tries his best to see that all such items mention that they install water heaters. They run provocative ads such as the one shown where they ask the user to compare fuel costs based on his own calculations.

They sell four sizes of water heaters, from 120 to 270 gallons per hour recovery rate at 100° rise. They feature the 130 gallon size with a 30 gallon tank because it has a refractory combustion chamber. It's made by General Automatic and privately branded by Home Oil.

Many oil companies sponsor a baseball or bowling team, but Home Oil places its patronage on hockey—recognizing New England's enthusiasm for the sport.

A question naturally arises over how these heaters can be sold so well in an area with so many boilers having summer-winter hookups. Muchinsky explained that they naturally can't sell them where the boiler makes plenty of hot water. But he finds that on some builder developments they may be undersized. Here they sell oil for heat and say nothing. If after a year or two there's a complaint about hot water volume a salesman will explain that the requirement for hot water in a home has grown so much these days that a separate heater would fill the need. Then of course the warm air installations are always good prospects.

In summary, it would appear that Home Oil pretty well knows its way around Fairfield County, one of New York's real fancy bedrooms.

Sales Manager Fitch believes in oil-powered water heaters. Satisfied customers often do the selling for him.

Schildwachter of the Bronx

Three Generations built up impressive Gallonage through unified Responsibility

by John W. Schulz

A FUELOIL COMPANY owned and operated by one family is not unusual. Traveling, you find many such companies.

Outstanding in many ways, however, is the family-owned fueloil-oilburner company of Fred M. Schildwachter & Sons, Inc., located in the Bronx, N. Y. Spending a day there recently, I gathered much information on oilheating activities and fueloil handling procedures — information indicating this relatively old fueloil company deserves a reputation for being a leader in its lines of endeavor.

Starting in 1930, three generations of Schildwachter men concentrated on building up an impressive volume of retail fueloil gallonage. Their organization is outstanding because, for one thing, from its start in 1930 it worked vigorously and intensively at coupling oilburner know-how to fueloil sales efforts.

From the start, it concentrated on selling and servicing oilburners to increase fueloil acceptance, to gain the confidence of oilburner owners, and to sell fueloil. That was in 1930. Weigh that fact against the fact that during the past five years, and even during this year of 1960, many fueloil companies of greatly different sizes have been reaching the conclusion that they will prosper best by adding oilheating equipment sales and servicing to their activities.

An outstanding success story, starting with the efforts of one man, is interwoven with the history of the Schildwachter organization. At the start of this century, Frederick M. Schildwachter, founder of today's family-owned fueloil-oilburner company, was in the ice business in an exceedingly modest way. Using a horse and a wagon, he himself was out selling ice. But he started manufacturing ice in 1905.

By deciding to take the risks and chances of selling manufactured ice in competition with natural ice (risks and chances considered highly dangerous at that time by conservative business men), Frederick M. Schildwachter gave an early demonstration of a Schildwachter trait. This trait is the inclination to find out what is new and novel in a line of endeavor, study it in detail, and then delve into it with great determination.

Today this man's sons and grandsons are proving they inherited this trait. For many years, in fact, they have studied and put to use new and unusual ideas related to oilburner sales and service, and to their fueloil business. Doing that has worked out highly successfully for them, and they now vow they aim to continue working in the same modern or even ultra-modern fashion. These men seek out new ideas and products possibly suitable for use in their business. They work hard at this.

In the late 1920's, Frederick M. Schildwachter made an early and accurate evaluation of the potential of the retail fueloil business, which then was a new-born babe that was scoffed at by conservative business men solidly and profitably entrenched in the business of selling thousands and thousands of tons of coal for heating.

He had a fueloil bulk plant built in 1930, and he delved energetically into retailing fueloil for heating. That turned out to be a correct move for the family of founder Schildwachter.

Wisely also, the growth of his or-

Fleet of 25 Schildwachter fueloil trucks ready for the heating season. Loading rack has positions for eight trucks. Fueloil piping of the rack has been improved with 10" pipe replacing 6" pipe and as many elbows eliminated as possible. Long-sweep elbows were installed; over-all improvement increased oil flow to trucks by one-third. All trucks are loaded at night; they stand in garage full of oil. Loading always consists of using two spouts to fill two compartments simultaneously. Flow rate per spout is 350 gpm for No. 2 oil and 475 gpm for No. 4 oil. Yardman gases trucks as they are being loaded.

ganization proved later, from the start he coupled oilburner sales and service to fueloil from the company's founding in 1930. For many years from then on, the Schildwachter name was synonymous with the name of the Quiet May oilburner . . . in the Bronx and the neighboring areas where Schildwachter oil trucks and oilburner installation and service trucks were seen so often that they were almost as well known as Yellow Cabs.

Oldtimers in the oilheating business fondly recall those years, the 1930's, when the Gerotor pump was described as "the heart of the Quiet May," and when the Quiet May burner boasted of its jewel-fitted, blue sapphire atomizing nozzle, and was made in giant-size Model R equipped with a one and one-half horsepower motor and rated to fire up to 35 gph.

In those years, the men of the Schildwachter organization aimed to sell exceptional oilburners with expensive, exclusive features, at a premium price. They aimed to do exceptionally good installation work . . . and above all to become known for doing exceptionally good oilburner service work. Out of these efforts came a build-up of their fueloil business.

The Schildwachter organization made two major changes in its operations in 1940. It dropped out of the business of manufacturing ice; it went wholeheartedly into the business of commercial-industrial oilburners by starting to sell horizontal rotary-cup burners. It started handling Ray oilburners in 1950, and today is merchandising them vigorously.

The Schildwachter oilburner efforts are peculiarly intensive. The executives of the company declare today that they aim to sell and install oilheating equipment exceedingly modern, and capable of performance unusually dependable and efficient. As that does not jibe with lowest prices for installed equipment, these men are accustomed to have an owner of a home or large building point out that the Schildwachter price quotation for an oilburner installation is considerably above the prices quoted by competitors.

Visiting a boiler room in Mamaroneck, N. Y. while getting data for this article, I saw Schildwachter installation men at work installing a large steel boiler complete with a Ray burner for No. 6 oil. Studying the details of the installation, I could readily understand why its price had to be considerably above the price of a simple installation of a rotary-cup burner able to use No. 6 oil.

Quality Job for No. 6 Oil

This installation for No. 6 oil included, of course, fueloil preheating equipment which every burner dealer has to install on such a job. This is an indirect under-the-waterline oil heater hooked to the low-pressure steam boiler, and the cup-line, automatic, electric oil heater that UL requires for an automatic rotary-cup burner using No. 6 fueloil. The installation had to have these two kinds of fueloil heating equipment; every commercial-industrial oilburner dealer would provide them, consider them necessary for an automatic, No. 6 oil installation.

Beyond that, however, this installation had additional equipment, costly in itself and costly to install, to heat and circulate fueloil with the boiler cold. This equipment certainly will provide dependable, assured start-ups of the oilburner at any time, with the boiler hot or stone cold. It assures good, efficient oilburner operation, starting with the boiler stone cold . . . and it eliminates any need to change any adjustment of the oilburner when it is being started with the boiler cold. It assures maximum firing efficiency with the boiler cold or hot, thus minimizes fueloil consumption. As the boiler serves only for steam heating, not for year-round hot water provided by a tankless water heater, often it will become stone cold, then will need firing. At such times it will start up automatically as smoothly and efficiently as though it uses No. 2 oil, which of course needs no preheating.

Equipment Refinements

The additional oil-heating and oil-handling equipment on this installation, which provides such good stone-cold start-ups, includes:

1. An automatic, electric fueloil preheater of high capacity located in the suction-line stub of the oil storage tank . . . to heat the fueloil entering the suction line from the oil tank.

2. Another high-capacity automatic, electric oil preheater located in the return line, to heat fueloil returned to the tank. All hot, returned oil is piped to the bottom of the oil tank so that it flows into the suction line, and so that the suction line receives the full benefit of the heat in the returned oil.

3. A pump-set independent of the oilburner, installed so that it will circulate electrically heated fueloil through the suction line and the return line, and through the oilburner itself, when the boiler is stone-cold or is at any temperature lower than needed for the under-the-waterline heater to be effective. This pump-set automatically operates as needed, when hot oil should be circulated to heat up cold oil lines or to keep the oil lines warm. The pump-set serves this function with the burner running or with it idle.

There's much more to this Ray system of pipe-line and oilburner oil heating than this. There's a dozen or two more tricks to it. For example, things are arranged so that if the pump-set is turned off or breaks down, the burner simply will operate as though no pump-set were on the job. Also, when hot oil is being circulated by the pump-set, it actually goes through the fueloil reservoir on the burner, keeping hot the reservoir and the primary oil pump and secondary oil pump located in it.

Including the cup-line fueloil preheater which regularly is part of the Ray oilburner for automatic operation using No. 6 oil, this installation has the benefits of three high-capacity, electric fueloil preheaters all told. It has the regular under-the-waterline indirect fueloil heater. It has the pump-

Left: Return-line electric oil preheater and worm-drive auxiliary pump-set of the Ray oilburner installation described in the article. Fred H. Schildwachter, who sales-engineers his company's commercial-industrial installations, is pictured here checking over a sketch of the piping. Right: Daniel A., Jr., and David C. Schildwachter enthuse over the running, demonstration model of the RO-AN smokepipe, heat reclaimer, which is displayed in their headquarters.

set (giving the double-pump oilburner the benefits of three fueloil pumps), and a highly special control system which operates the pump-set and the electric oil heaters properly with the burner running or idle . . . all at the proper times when the boiler is stone cold and should be started up, when the oil lines and burner are standing by hot with the boiler cold, and when the burner is operating but the boiler is either below its usual operating temperature or is at any temperature up to steaming.

The extra equipment and the extra benefits it provides are worthwhile indeed! But they do run up the cost of the installation, making it much higher than would be the cost of an automatic, No. 6 oil installation that can be described as "competitive," "plain," or "stripped."

The Schildwachter men, however, make a policy of trying to sell a complete installation . . . one that costs more because it has extra features that will add to the owner's satisfaction by ultra-dependable operation and minimum fuel bills.

The oilheating and oilburner specialists in the Schildwachter family are outstanding in their interest in new kinds of equipment, including equipment that's decidedly unorthodox and greatly different than usually is installed. They do things which their most cautious competitors are reluctant to do; they aim to gain success in these things through a show of special thoroughness.

For a year and a half, for example, they've been intensive at merchandising "Schildwachter's heat Reclaimer by RO-AN," a smokepipe economizer described as being in a class by itself because it bears the label of the Underwriters' Laboratories, is not low-priced, and cleans itself by the action of a moving, wiper plate all the while the oilburner runs. Installations of this domestic economizer naturally are comparatively expensive, but the Schildwachter organization, tied up with RO-AN on an exclusive franchise basis for the New York area, has sold 70 such installations to date.

Indicative of Schildwachters faith and confidence in the dependable and service-free operation of these economizers, this company services these economizers at no extra charge, if the owners have the "complete and comprehensive" yearly service arrangement the company offers.

This yearly oilburner service for domestic-type oilburners is supposed to be ultra-complete and of highest quality. It includes: Summer-time vacuum cleaning of flues, etc.; burner adjustment and tune-up with the added feature of complete combustion testing including check-ups of draft, CO_2, stack temperature, and smoke (a modern smoke-checking instrument is used, these oil company men proudly point out); emergency service calls, and replacement as needed of many burner and control parts listed in the contract and described as being worth more than $750.

The yearly cost of this ultra-complete burner service is $34.95, which is relatively high, and which again shows the Schildwachter tendency to try to offer superior services for those who aim to buy the better, not the cheaper in things.

The ultra-complete yearly service for domestic-type oilburner, which was just described, is called Plan "3." Plan "2" is available at $24.95 a year, and is similar except that the customer must pay for any replacement parts needed, but not for the labor to install the parts. Plan "1," at $12, includes simply a yearly vacuum cleaning, lubrication of motors, and check-up and instrument adjustment of the burner.

Setting what most oil suppliers find to be a precedent, Schildwachter recently started offering a comprehensive, all-parts-and-labor service contract for owners of large rotary-cup burners using Nos. 5 and 6 fueloils. Many owners of large apartment houses, business buildings, factories, etc. have wanted such a service policy for years—so that each year they could budget a certain sum of money to cover all the labor and parts needed for servicing an oilburner firing, say, 15 to 120 gph.

Such yearly, complete service with the owner paying a certain sum a year is difficult to arrange. Burner installa-

tions differ greatly from each other with respect to equipment included in the set-up, gph capacities, and equipment condition. Each installation must be checked beforehand in detail; many need major improvements before they are suitable to service.

There are other difficulties. Finding these complications and difficulties to be a challenge, the Schildwachter men buckled down to work at overcoming them. At a much higher price, of course, they now offer for large burners using No. 5 or No. 6 oil the same kind of all-parts-and-labor service contract that's been available for years throughout the oilheating industry for domestic-type burners.

In starting out to do something novel and daring of this kind for its fueloil customers, the Schildwachter organization has the great advantage of having many Schildwachter men in executive positions; in intimate, personal contact with almost every oil customer, these executives are able to do things they could not do otherwise. The fact that this organization has serviced thousands of commercial-industrial installations for years, and has supplied fueloil for them, provides advantages which are invaluable.

Although there are many family-owned fueloil companies, few if any are family-owned and family-operated to the degree that the Schildwachter organization is.

Frederick M. Schildwachter, the founder, had five sons, who joined his fueloil and oilburner enterprise. Of these, surviving today and active in the business are Albert G., president, Charles W., and Daniel A., Senior. Those are the second generation men in the company today.

Their sons now in the business, the third generation men, include Daniel A., Junior, David C., and Fred H.—three grandsons of the founder.

As these men see things, they are ready to explain, there are certain keys to success in a fueloil and oilheating operation of their kind.

They say one key to success is tremendously good oilburner service work, for the smallest to the largest oil customer, on an intimate and personalized basis.

Seven days a week during the heating season, from 7:00 AM to 11:00 at night, Schildwachter expert servicemen are ready to go out from headquarters. Emergency service is available on a 24-hour basis, every day of the heating season. A night man at headquarters, not a telephone answering service, takes care of emergency calls that come in at night.

The personal Touch

Here's part of the intimate, personal touch in the oilburner service operation. One of the Schildwachters (that means a top executive for a customer to deal with directly if necessary) is responsible for everything that goes on with respect to oilburner servicing and fueloil operations, from office closing time of 5:00 PM until 7:00 AM in the morning. The different Schildwachters take turns at this. The night man, answering phones in the office, can get in touch by regular telephone or by car radio with the Schildwachter who is responsible for the particular night. This system permits a top-level executive, a member of the family, to step in and take charge if any emergency or extraordinary situation arises. The customers learn there's a Schildwachter family responsibility working for them nights as well as days.

Another key to success, emphasized by the Schildwachter men, is "unified service"—the customer deals with just one company, which is responsible for the sale and installation of his oilheating equipment, his servicing needs, and his fueloil needs.

With such unified service, there can be no buck passing with respect to burner difficulties and complications or high oil bills. The servicemen can't say, for example, that poor performance is caused by inferior fueloil or by improper installation of the oilburner equipment. An oil salesman can't say trouble is caused by poor installation work, installation of the wrong equipment, or improper, oilburner adjustments. An oilburner installer can't say his installation has gone to pot, is working poorly after a year or two, because of inferior fueloil, or because some outside service company goofed in adjusting or repairing the installation.

Today, the grandsons of Founder Schildwachter like to keep on quoting one of his policies: "True, you can't give a customer something for nothing. But just make sure that every customer gets what he pays for."

Customer cards, filed in order of degree-days of next deliveries, can be picked out of this Electrofile system by dialing letters representing the first parts of a customer's last name and the first letters of the name of the street on which he lives. As a different operation, cards can be picked out according to geographical location of the customers. Electrofile makes a one-card degree-day system, eliminates the need for maintaining customer cards arranged in an alphabetical file.

Acres of Diamonds

Our present fueloil Customers are excellent Outlets for suitable related Products

by F. S. Burroughs*

NOTABLE, this past year in petroleum industry thinking, has been a trend toward re-appreciation of fundamental marketing principles. For fueloil, as one segment of the industry, facing formidable utility competition, there must be no exception from this healthy process.

Basically, the existence of a demand for its products and services constitutes the sole justification for a petroleum industry. All operations carried on in the finding of oil, its extraction from the earth, its conversion, through refining, from crude state to finished product, and its progressive transportation to the market, have purpose only because uses have been cultivated for oil in its many forms.

A corollary of this bed-rock premise is so elementary as to be too often disregarded by fueloil men. Residential, commercial, institutional and industrial customers, in the *degree* of their acceptance of oil's products and services, determine the *limits* of this demand.

The main questions then, for all marketers of heating oil (as for other products of petroleum) must be:

1. Are we serving existing demand to the best of our abilities?

2. Are we cultivating the widest possible demand potentials that may be created in our markets?

To the first of these questions we shall devote scant attention. This continues to be an area for concentrated industry thought. Without in any way deprecating its importance, we feel that adequate and thoughtful consideration is presently being accorded, and will continue to be given, this ever-present problem.

Our concentration here concerns itself, instead, with the second of these questions. I submit that in this area the fueloil industry has been blind indeed.

Indisputably, oilheating in its two principal present-day uses satisfies but a very small fraction of the full range of needs or desires of its various consumer groups. Our industry offers energy for heating space, or for heating water. Contrast this relationship with that enjoyed by the gas utility, fulfilling many customer wants by way of an assortment of services—"Gas does the seven big homemaking jobs."

Electricity surpasses gas in the variety of jobs it performs—lighting, cooking, refrigeration, radio, TV, fans, airconditioning, space and water heating, and so on ad infinitum.

Here are competitors, versatile in the range of their appeals for the consumer's dollar. On just two fronts—space and water heating—fueloil competes, virtually clinging to its place in the market by its very fingernails.

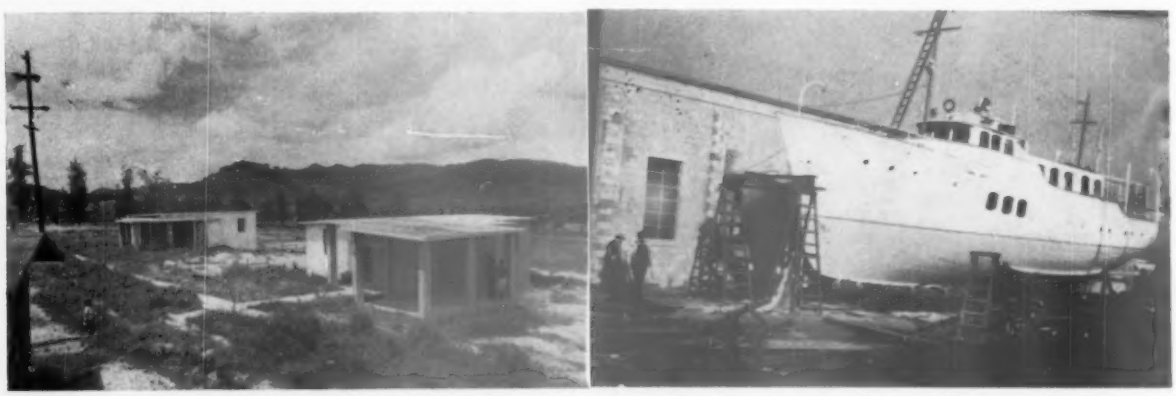
Is it possible this is truly our widest immediate horizon, pending development of other fueloil applications such as, for example, the oil-powered home? Are we not overlooking many possibilities that might be suggested through re-examination of our fundamental role as marketers?

First, let us admit there are many goods and services we might be furnishing, to earn a larger share of the consumer's dollar. It is essential that we begin to think in this frame of reference if we are to avoid yielding our place in the race. We should not think of ourselves as being in business to make people like what we choose to sell; rather, of providing, to the best of our abilities, what people want.

Secondly, we are prone to overlook one of our chief assets as an established industry of local marketers, enjoying the hard-won confidence of our customers. We have earned the acceptance of millions of homeowners, farm, commercial, institutional and industrial consumers, in our regular everyday business relationships.

We have a "foot in the door" so to speak, so long as we continue to merit this confidence. We have an enormous advantage here over any "outsider." But are we building on this asset by devis-

*Secretary, National Fueloil Council, Inc.



Here are two typical examples of petrochemical applications which offer promise for distribution through fueloil dealer channels. The specified roof coating for this Puerto Rican Housing Authority project (left) was a petrochemical product. Long term beauty and resistance to weather were achieved. In the marine field petrochemicals have been extensively used (right). Coatings formulated by the Lockrey-Fater Corp., Long Island, N. Y., were used in these examples.

Some end Applications of Petrochemical Products

A partial list of products of petrochemical origin, appropriate for distribution by fueloil marketers to residential, farm, institutional, commercial or industrial users.

Classification	*Specific Application Area*	*Base Petro-Chemical Products*	*Type of Application*
(EXTERIOR)	Roofs	Butyl	Primarily professional application. Occasionally by home-owners.
	Asbestos Siding	Butyl	
	Wood, Shingle & Clapboard	Butyl, Alkyd & Urethane	
	Foundations	Epoxies, Polyesters, Butons, Butyls	Either professional application or by homeowners
Coatings:	Brick & Concrete Walls	Polyesters, Vinyls, Epoxies, Butons, Acrylics	Professional application (Special equipment needed)
	Patios & Walls	Metallic Vinyls, Epoxies, Polyesters, Butons	Primarily by homeowner. Occasionally professional application
	Glazing & Caulking	Butyl	
(INTERIOR)	Walls	Acrylics, Polyesters, Epoxies, Vinyls	Primarily by homeowners, sometimes professional application
Coatings:	Basement Floors	Metallic Vinyls, Polyesters, Epoxies, Butons	
	Basement Walls	Epoxies, Polyesters, Butons	
Detergents:	Dishes, Clothes, General Cleaning	Any number of products which use Petrochemicals in their formulation	By homeowner
Waxes:	Floors, Furniture, Surfaces		
Insecticides, Fertilizers:	Lawns, Gardens, Trees, Shrubbery		

ing more ways in which to serve the hungry needs of these friends?

Finally, here is a thought I have never heard expressed, about a singular difference between oil and the utility fuels:

Presently, all three compete on an "energy" front. Energy for house-heating, energy for water heating and so on. Because utility fuels must be transmitted by pipe or wire they can never become more than a source of energy. Only oil has a different field of use, in non-energy application.

In this field, as an industry of local marketers, doing business with established customers, we may have a new horizon of staggering proportions.

This is the vast and beckoning field of petrochemicals . . . products from petroleum's "magic barrels," for the homeowner, for the farm, for business and industry. Here are new "glamor" products that fairly make one's hair stand on end with their exciting potentials. And they're already proving to have sales appeal of dynamic proportions—though sales and distribution frameworks thus far, are already being swiftly developed, in a kind of homesteading claim race, by other marketers alert to this great new horizon.

New, butyl-based exterior coatings, for example, can offer the homeowner (or other users) extension of painting cycles to periods of 15 years, maybe longer—in contrast to traditional oil-pigment type coatings which require renewal each 3-5 years. New protective films, for roofs, can be applied to seal and revitalize with impervious, long-lasting petrochemical-rubber films. Metallic vinyl finishes, from oil's barrel, can cover cellar floors, masonry, or surfaces exposed to weather with tough, resistant, "metal-plate" skins. The epoxies introduce new adhesive and coating products that are truly "petro-miracles." Detergents, waxes, caulking compounds, household chemicals, insecticides, fertilizers, fabrics and plastics—from the propylenes, ethylenes, acetylenes and butylenes are ready or on the chemical drawing boards, for a brand new wonder era.

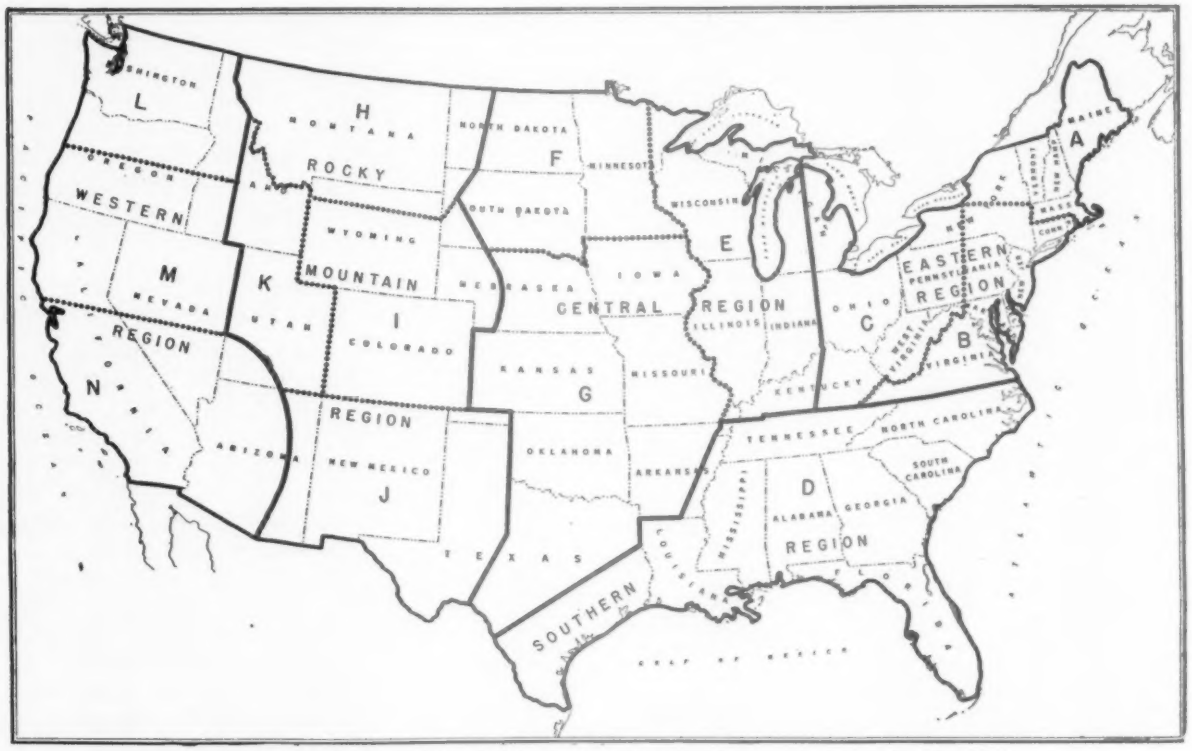
Petrochemical products are brought to the consumer now through a variety of retail channels, but almost never through distributive outlets that are direct members of the petroleum industry's own family of marketers. Hardware, building supply and paint outlets, groceries, drug and department stores, mail order and specialty chains, form a heterogeneous distributive complex.

Fueloil Dealers logical Outlets

Nowhere is there identity for petrochemical derivatives as a class of products. None of our industry's marketers (with one or two recent and rare exceptions) are presently marketers of petrochemicals. In yielding this rich market, in whole or part, to others, despite oil's inherent and initial proprietary advantages, the petroleum industry may well be abdicating, by default and by lack of initiative, a position of incalculable potential. The loss, in public relations terms alone, of direct identification with the miracles it makes for homes may become a sacrifice to be forever regretted in the future.

Against such miscalculation, the fueloil marketing structure offers a bright promise of hope. The fueloil marketer—local, respected merchant that he is in nearly every community in our nation—can distribute these products to the consumer. His is a forceful and logical channel for merchandising many consumer products from this second "cut from oil's barrel" to existing, hungry and established mass markets. The rewards in successful identification of the fueloil industry with this concept are many and obvious—to dealer and refiner alike.

At this moment the National Fueloil Council is researching and exploring the possibilities in this new market frontier. A carefully conceived, comprehensive program is under consideration by NFC's directors and the related representatives and petrochemical specialists of its member refining companies. In the form already developed, such a program could be conservatively tested in one or several pilot "test" markets, there to prove at insignificant cost risk its true feasibility.



Five regions and 14 marketing districts of the National Survey of Burner-Fueloils 1960.

Petroleum Products Survey No. 16 is Study of Burner-Fueloils 1960

PROPERTIES of burner-fueloils are listed and studied in the report "Petroleum Products Survey No. 16, Burner-Fueloils 1960," issued by the U. S. Bureau of Mines and compiled by O. C. Blade at the Petroleum Research Center, Bartlesville, Okla.

The survey was conducted at the request of the Oil-Heat Institute of America and the petroleum industry under a cooperative agreement between the Bureau of Mines and the American Petroleum Institute.

Samples of burner-fueloil, typical of their manufacture during the early part of 1960 were analyzed by the refiners and the results transmitted to the Bureau of Mines for study and compilation. Data on 415 samples were submitted by 44 petroleum refining companies. The report presents data, giving the analyses in detail in five general groups by grades of burner-fueloils; each group is subdivided according to geographic marketing distribution.

Table 2—Summary of Grade 2 Fuels, Burner Fueloil Survey, 1960

Geographic distribution of burner fueloils[1]				Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E, F, G			A, B, C, D, J			F, G, L, N			H, I, K		
Number of fuels				59			22			49			20			25		
Test	ASTM D396 Method	requirements Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity, ° API	D287	26	..	27.5	34.9	45.0	30.1	35.0	46.7	27.5	34.8	39.1	22.7	35.1	40.9	26.3	33.9	40.9
Flash point, Pensky-Martens closed tester, ° F.	D93	100	..	140	..	225	150	..	190	134	..	224	138	..	224	126	..	230
Viscosity																		
Kinematic at 100° F., centistokes	D445	..	4.3	2.10	2.61	3.81	1.8	2.65	4.21	1.05	2.51	4.21	1.91	2.44	3.20	1.90	2.93	4.60
Cloud test, ° F.	D97	..	..	—17	..	26	—30	..	10	—20	..	14	—40	..	18	—50	..	24
Pour point, ° F.	D97	..	20	—30	..	20	—40	..	0	—25	..	5	—35	..	5	—40	..	25
Sulfur content, wt. percent	D129	..	1.0	0.05	0.249	0.670	0.04	0.255	0.70	0.052	0.318	1.17	0.09	0.392	1.53	0.04	0.490	1.37
Aniline point, ° F.	D611	..	..	95.0	140.4	174.9	107	141.3	162	95.0	137.7	169.2	47	134.6	158	92	139.1	157
Ramsbottom carbon residue on 10 percent residue, percent	D524	..	0.35	0.0	0.116	0.34	0.0	0.119	0.30	.0	0.131	0.30	0.05	0.109	0.35	0.06	0.103	0.16
Corrosion, 3 hours at 122° F., No.	D130	..	..	IA	..	1	IA	..	1	IA	..	2	IA	..	2	IA	..	2
Ash[3], percent	D482	..	..	0.000	0.000	0.002	0.000	0.000	0.001	0.000	0.000	0.002	0.000	0.000	0.001	0.000	0.000	0.004
Water and sediment, vol. percent	D96	..	0.10	0.0	0.0	0.08	0.0	0.0	0.10	0.0	0.0	0.01	0.0	0.0	Trace	0.0	0.0	Trace
Distillation test, on volume recovered basis:	D158																	
Initial boiling point, ° F.		..	..	328	370	446	330	361	411	328	364	452	343	389	462	343	389	465
10 percent		..	[4]440	390	432	500	390	427	454	391	425	482	394	441	488	367	446	502
50 percent		..	..	434	499	562	430	499	525	460	496	528	454	496	536	407	508	562
90 percent		..	675	502	576	626	462	577	608	539	574	611	493	564	623	455	585	635
End point		..	..	580	629	680	600	635	668	580	625	668	540	615	665	497	639	691

[1]Regions and districts are shown on map (fig. 1). [2]Some of the fuels are sold in districts of more than one region. [3]Figures for ash are not shown in the tables of detailed analyses as they were not required for this grade. However, some data, less than one-third of the analyses, contained results of the tests which are summarized here. [4]Footnote in table 1 of ASTM D396-48T: "The 10 percent point may be specified at 440° F. maximum for use in other than atomizing burners."

Table 1—Summary of Grade 1 Fuels, Burner Fueloil Survey, 1960

Geographic distribution of burner fueloils[1]				Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E, F, G			A, B, C, D, H, J			F, G, L, N			H, I, K		
Number of fuels				44			18			49			24			21		
Test	ASTM D396 Method	requirements Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity ..... ° API	D287	35	..	38.2	42.6	47.4	38.2	42.3	46.1	38.2	42.4	46.1	38.1	41.8	45.3	35.0	40.2	45.0
Flash point, Tag closed tester ..... ° F.	D56[3]	100	..	125	..	168	125	..	160	124	..	162	126	..	162	129	..	158
Viscosity																		
Kinematic at 100° F. .....centistokes	D445	1.4	2.2	1.4	1.79	2.68	1.49	1.77	2.60	1.37	1.81	2.68	1.45	1.77	2.11	1.4	1.78	2.09
Cloud test ..... ° F.	D97	..	..	—64	..	—2	—64	..	—12	—64	..	0	—56	..	—15	—52	..	—18
Pour point ..... ° F.	D97	..	0	—70	..	—15	—70	..	—15	—70	..	—5	—60	..	—25	—55	..	—25
Sulfur content .....wt. percent	D129	..	0.5	0.005	0.071	0.200	0.012	0.072	0.233	0.004	0.110	0.52	0.000	0.144	0.90	0.000	0.183	0.90
Aniline point ..... ° F.	D611	..	..	139.0	150.5	168.8	139.0	149.3	163	139.2	150.7	163	132.1	145.6	155.8	126.7	140.5	158.5
Ramsbottom carbon residue																		
on 10 percent residue .....percent	D524	..	0.15	0.0	0.052	0.10	0.0	0.059	0.12	0.0	0.061	0.20	0.0	0.050	0.13	0.0	0.077	0.13
Corrosion, 3 hours at 122° F. .....No.	D130	..	3	1A	..	1	1A	..	1	1A	..	1	1A	..	2A	1A	..	1
Ash[4] .....percent	D482	..	..	0.00	0.00	0.001	0.00	0.00	0.001	0.00	0.00	0.0	0.00	0.00	0.0002	0.00	0.00	0.00
Water and sediment .....vol. percent	D96	..	Trace	0.0	0.0	Trace	0.0	0.0	Trace	0.0	0.0	Trace	0.0	0.0	Trace	0.0	0.0	Trace
Distillation test,																		
on volume recovered basis:	D86																	
Initial boiling point ..... ° F.		..	..	320	349	374	320	351	378	320	352	387	338	362	388	325	357	388
10 percent		..	420	363	390	439	373	390	430	359	391	430	365	397	421	364	393	417
50 percent		..	..	402	437	506	412	437	493	395	442	506	404	437	462	405	436	470
90 percent		..	..	456	495	571	456	495	565	449	505	571	460	495	529	455	493	545
End point		..	625	479	533	610	489	533	610	489	541	610	486	538	578	486	540	578

Table 3—Summary of Grade 4 Fuels, Burner Fueloil Survey, 1960

Geographic distribution of burner fueloils[1]				Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E			A, B, C, D, H, K, L			F, L			F, H, I, K		
Number of fuels				19			3			8			3			2		
Test	ASTM D396 Method	requirements Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity ..... ° API	D287	..	..	9.0	21.2	32.4	13.0	22.3	27.9	10.7	18.5	27.9	14.3	22.6	30.1	14.3	(5)	30.1
Flash point, Pensky-Martens																		
closed tester ..... ° F.	D93	130	..	166	..	250	200	..	240	170	..	250	200	..	250	215	..	250
Viscosity																		
Kinematic at 100° F. .....centistokes	D445	5.8	26.4	4.95	15.41	26.6	4.58	11.94	25.4	5.83	16.84	26.2	4.3	(5)	17.1	4.3	(5)	17.1
Cloud test ..... ° F.	D97	..	..	..	..	..	..	..	..	..	..	..	..	20	..	..	20	..
Pour point ..... ° F.	D97	..	20	—55	..	10	—25	..	5	—35	..	10	—35	..	10	—35	..	10
Sulfur content .....wt. percent	D129	..	..	0.24	0.77	1.76	0.24	0.48	0.84	0.32	1.21	2.8	1.75	2.02	2.2	2.10	(5)	2.2
Aniline point ..... ° F.	D611	..	..	..	151.0	..	—	137	..	..	..	..				..	..	..
Ramsbottom carbon residue													..	..	..			
on 100 percent sample .....percent	D524	..	..	0.39	3.30	6.50	0.49	2.15	4.79	1.26	4.55	8.20				..	..	..
Corrosion, 3 hours at 122° F. .....No.	D130	..		1	..	..	..	..	..	1	..	..	..	(5)	2.62	1	..	..
Ash .....percent	D482	..	0.10	0.0	0.016	0.06	0.01	0.016	0.028	0.004	0.015	0.040	..	..	..	0.00	(5)	0.01
Water and sediment .....vol. percent	D96	..	0.50	Trace	0.13	0.4	Trace	0.08	0.1	Trace	0.11	0.2	0.00	0.004	0.01	0.0	(5)	0.1
Distillation test,													0.0	0.05	0.1			
on volume recovered basis:																		
Initial boiling point ..... ° F.				..	422	..	..	..	..	..	..	..	..	481	..	..	481	..
10 percent				..	496	..	..	..	..	..	..	..	..	521	..	..	521	..
50 percent				..	674	..	..	..	..	..	..	..	..	585	..	..	585	..
90 percent				..	750	..	..	..	..	..	..	..	..	638	..	..	638	..
End point				..	754	..	..	..	..	..	..	..	.	666	..	..	666	..

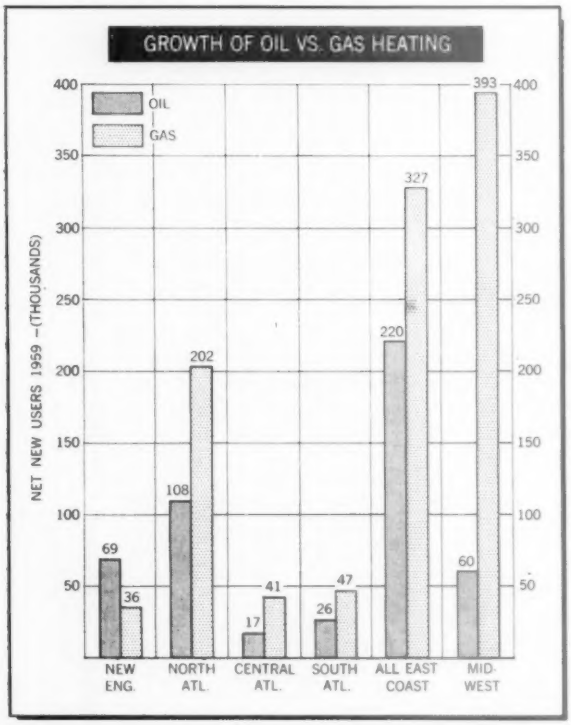
Table 4—Summary of Grade 5 Fuels, Burner Fueloil Survey, 1960

Geographic distribution of burner fueloils[1]				Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E, G			A, C, D, H, K, L			F, L, M			F, H, I, K		
Number of fuels				15			5			16			10			14		
Test	ASTM D396 Method	requirements Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity ..... ° API	D287	..	..	8.0	16.9	22.5	15.3	16.0	17.8	8.6	16.4	22.5	7.3	15.0	19.8	10.6	13.6	17.5
Flash point, Pensky-Martens																		
closed tester ..... ° F.	D93	130	..	160	..	255	160	..	220	150	..	260	164	..	340	162	..	260
Viscosity																		
Kinematic at 100° F. .....centistokes	D445	32.1	..	34.5	73.2	173	76.51	162.9	353.8	38	90.8	210	30.0	131.7	275	42.4	99.4	160
Furol at 122° F. .....seconds	D88	..	40	15.6	27.1	42.0	17	39.2	81.0	11.2	23.1	40	10.5	29.6	55	19.8	29.2	37
Pour point ..... ° F.	D97	..	..	—20	..	55	—20	..	45	—25	..	55	—30	..	85	—40	..	50
Sulfur content .....wt. percent	D129	..	..	0.37	1.14	2.50	0.97	2.01	2.86	0.51	1.46	2.86	0.8	2.08	4.6	0.9	1.82	4.6
Ramsbottom carbon residue																		
on 100 percent sample .....percent	D524	..	..	4.8	6.9	9.5	3.9	8.7	12.0	3.50	6.5	9.7	.9	5.9	10.0	4.0	7.7	12.7
Ash .....percent	D482	..	0.10	Trace	0.024	0.077	0.01	0.040	0.06	0.003	0.032	0.1	Trace	0.030	0.10	0.01	0.035	.10
Water and sediment .....vol. percent	D96	..	1.00	0.05	0.20	0.9	Trace	0.13	0.2	0.00	0.20	.9	.10	0.12	.20	.10	0.12	.20

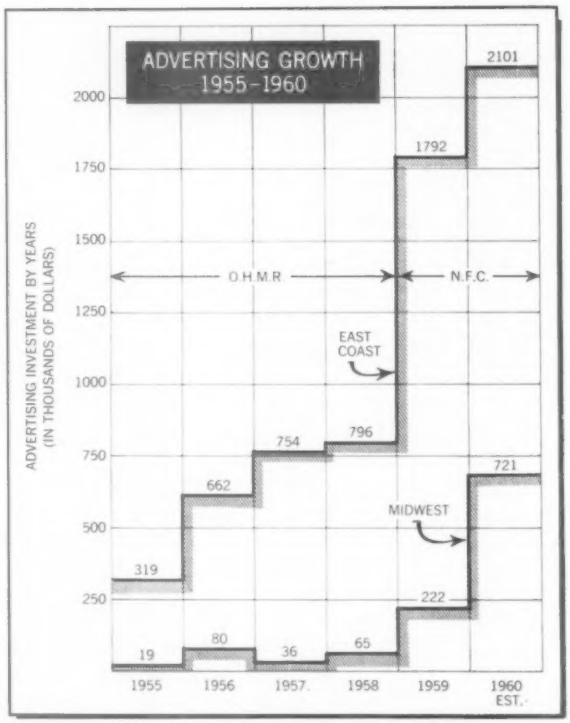
Table 5—Summary of Grade 6 Fuels, Burner Fueloil Survey, 1960

Geographic distribution of burner fueloils[1]				Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E, G			A, B, C, D, H, I, K, L			E, F, G, L, M, N			F, H, I, K		
Number of fuels				41			20			33			20			28		
Test	ASTM D396 Method	requirements Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity ..... ° API	D287	..	..	—3.7	12.3	18.3	7.4	11.7	15.6	—3.7	10.6	18.0	2.3	8.9	18.8	2.5	8.0	15.5
Flash point, Pensky-Martens																		
closed tester ..... ° F.	D93	150	..	160	..	340	150	..	300	150	..	340	180	..	340	172	..	285
Viscosity																		
Furol at 122° F. .....seconds	D88	45	300	45	163.4	250	45	164.2	295	99	197.2	294	43.0	173.4	284	95	166.0	448
Pour point ..... ° F.	D97	..	..	0	..	75	0	..	85	20	..	85	—15	..	85	—15	..	65
Sulfur content .....wt. percent	D120	..	..	0.25	1.36	2.98	0.25	1.50	3.03	0.50	1.54	4.10	0.787	2.04	5.2	0.73	1.89	5.2
Ramsbottom carbon residue																		
on 100 percent sample .....percent	D524	..	..	4.0	10.1	15.2	4.9	10.2	14.5	4.9	10.3	19.0	5.8	11.9	21.4	5.8	11.8	15.4
Ash .....percent	D482	..	..	0.009	0.059	0.30	0.008	0.061	.30	0.005	0.054	.30	Trace	0.038	0.15	0.01	0.052	.15
Water and sediment .....vol. percent	D96	..	2.00	0.0	0.19	0.5	Trace	0.17	0.4	0.0	0.19	0.7	Trace	0.22	1.1	.10	0.19	1.1

[1]Regions and districts are shown on map (fig. 1). [2]Some of the fuels are sold in districts of more than one region. [3]This method was selected for Grade 1 burner fueloils for the survey although ASTM D396-48T, Tentative Specifications for Fueloils, specifies flash point by Pensky-Martens Closed Tester (ASTM D93. [4]Figures for ash are not shown in the tables of detailed analyses as they were not required for this grade. However, some data, less than one-third of the analyses, contained results of the test which are summarized here. [5]No averages were computed as only two samples were represented for this test. [6]Result of test on one sample.



The competitive position of oil and gas is indicated by the chart that shows the net number of new users added in 1959. On the East Coast where a significant job of promotion was done, oilheating showed up fairly well. In the Midwest gas took the lion's share of the new business. Promotional investments in the Midwest have lagged pretty badly behind the East. In New England oil outsold gas by about two to one.



Here we see a six-year record of the expansion of local cooperative advertising campaigns sponsored by the National Fueloil Council and its predecessor, Oilheating Market Reports. Notice that the Midwest made very little headway until this year when additional refiners joined the group. This action stimulated the distributors to believe that campaigns are now feasible. Chicago is a good example.

Oilheating Promotion nears $3 million

Midwest more than triples its Budget this Year and East keeps growing

WITH FINAL FIGURES in for the third quarter and a dealer estimate on what their groups will supply in the fourth quarter, the total investment in cooperative oilheating campaigns this year will be about $2,822,000. This is 40% above the $2,014,000 invested in 1959. There are now 78 campaigns compared with 53 a year ago. Included in the 78 are four state campaigns each having from ten to two dozen individual market programs so the actual number of cities involved would be well over a hundred.

The most significant advance for this year has been in the Midwest, brought about largely by the fact that several more refiners of that region are now helping the industry through their support. True, the Midwest total investment is still only a third that of the Eastern states, but the central area grew this year by 224% whereas the East grew 17%.

The National Fueloil Council which sponsors and finances half of the total funds is now completing its second year, following four years of its predecessor, Oilheating Market Reports. At the third quarter board meeting of NFC its directors were brought up to date on the general state of the oilheating market through staff presentations, one of which included the charts shown here. The text accompanying the charts was the nucleus of presentation to the board members:

At the start of 1960 there were in operation approximately 9,647,000 oilburners for central heating. This represented a gain of 322,000 fueloil users during the preceding year, or 3.5%.

The actual new installations of oilheating equipment during the year were considerably greater, or 636,000. Many of those installations simply replaced old oilheating equipment so they preserved an existing oil market rather than increasing it.

In 1960 the installations to September 30 were 393,000, which is 10% below the same period of last year. The drop was caused by a severe setback in new home construction. In the strong oilheating areas of the North and East new home construction is running a third below last year.

We can see from the charts:

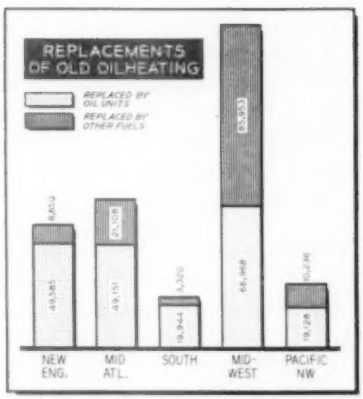
That NFC advertising parallels to a remarkable degree the gain in new users.

That—although this is only one fac-

tor—the East Coast regions show the results of longer, more intensive advertising in comparison with the Midwest in general

—in a higher relative growth of oil versus gas heating

—in a lower percentage of losses to other fuels; and these lower are in direct ratio to higher advertising expenditure per user



As oilheating equipment gets older the industry has a real challenge to keep its replacement business. In the past year 334,043 old oilheating installations came out. We saved 204,776 of these for oil fuel by selling new equipment. But we lost the other 129,267 to gas or electric heating. Both the replacements and the losses were strongest in the Midwest as the chart shows.

—and, conversely, in a much more favorable ratio of replacement of old oilheating by oil

That advertising has stimulated increased private distributor advertising —and this again has been higher in regions with more intensive NFC programs.

Looking forward:

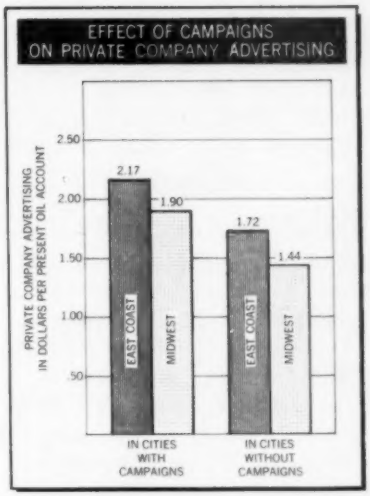
During 1960 we have added some new refiner members. Several others are considering participation as they plan their 1961 marketing budgets.

We believe that the ½ cent a barrel basis for supporting the campaigns by the refiners will be adequate for our needs, and permit us to add a few additional markets to our list of programs.

In 1960 refiners representing about 69% of the total market in NFC territories were supporting the campaigns. Dealers that serve 41% of all fueloil users made campaign investments.

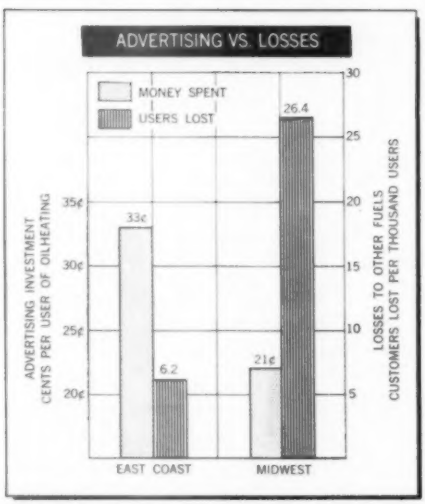
In 1961 there is plenty of room for more dealer participation but it will grow at a slower rate.

We recommend that every effort be made to bring into full use the ½ cent a barrel available from refiners on an equal matching basis.



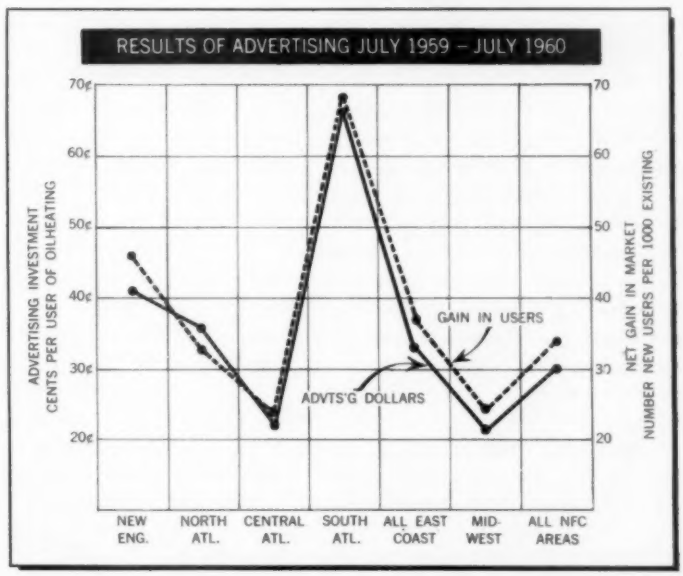
Where the cooperative advertising programs are being used, the individual fueloil distributors carry their promotional enthusiasm into their private sales effort. A good index of this is shown in the chart. They increase their own company advertising when they are supporting group campaigns. Combining the East Coast and the Midwest, the dealers in campaign cities spent $2.09 in private advertising to each customer on their books. In non-campaign markets they spent $1.64.

SEE LIST OF INDIVIDUAL CAMPAIGNS AND CONTRIBUTING REFINERS ON PAGE 98.



While this chart is not presented as a cause-and-effect relationship, it is interesting to see that our losses were low where investment was high, and vice versa. A more significant comparison appears in the table below that shows the extent of losses in cities with and without NFC campaigns.

Losses per 1,000 users	*East Coast*	*Mid-west*	*All NFC Area*
Cities with Campaigns	**5.5**	**24.3**	**11.2**
Cities without Campaigns	**7.6**	**29.9**	**14.3**



This final chart is our best. We wanted some way to measure the "weight" of the cooperative campaigns against the potential benefits and the actual gains. To "weigh" the advertising investment we divided the total outlay in each NFC region by the total number of oilheating users in the states represented. For example, in the New England region the estimated investment this year is $613,000. There are 1,484,000 users in the four states. Thus the regional campaign investment is 41 cents per present user. The net gain in number of users is approximately 69,000 so the ratio is 46 new users per 1,000 existing ones. The parallel is amazing, but it's right. We checked other sources on the rate of gains and they agree.

You must grow to really live

Equipment Sales are the most effective and fruitful Source of fueloil Volume

by Henry D. Crane

THE VERY LIFE BLOOD and virility of an organization is largely dependent upon an ever-expanding use of its products and services. The appraisal that follows is based on the conviction that any fueloil distributor, other than the very smallest, should start or continue more aggressively than ever, the policy of selling equipment for the development of a permanent and profitable fueloil business.

Yet inasmuch as the objective is to build a fueloil business, it follows naturally that the sales of oilburning equipment should be confined to areas within the practical range of the oil delivery and service territory. This is a generalization, of course, and should not preclude really profitable equipment sales beyond the delivery range, as an aid to supporting the sales force.

In the present phase of the oilheating industry, after the no-name cheapest-product era in the past several years, some very intelligent dealers decided to "go brand," selected a good line to fill all their needs and identified themselves with it in all of their sales promotion. Their salesmen became familiar with its features enabling them to make more convincing presentations, as well as meeting less pressure on price to match the cheapest thing available.

A thoroughly good installation of oilburning equipment, properly fitted to the needs of the home, will not only result in the minimum of service requirements through the years but also provide greater immunity from the possible appeal of other fuels, and from less capable competitors.

Any fueloil distributor, other than the very smallest, should start or continue more aggressively than ever the policy of selling equipment for the development of a permanent and profitable fueloil business.

It has been my experience that straight oilheating equipment salesmen get the best results; this works better than attempting to develop combination oil and equipment men. Of course the equipment salesman in most companies is given a bonus or some token of appreciation on each oil account that his sales create but he should expect to get his principal income from the burners and boilers or furnaces.

Also, experience has proven that equipment salesmen should do nothing but sell; they should not be handicapped with the responsibilities of supervising the actual installation work.

Regular and systematic canvassing should be positively reinstituted as an all important phase of selling, and in such manner as to require that at least a few hours every week be devoted to systematically organized prospecting.

When a fueloil distributor determines to reactivate his equipment selling on a broader base one of the early steps is to generate enthusiasm among all of the employees of his company regardless of the nature of their work.

Each member of the organization should be made to realize and fulfill his obligation as an integral part of the selling machine. This is just as true of a bookkeeper, or a clerk, a driver or a mechanic, as it is of the men who are making the direct sales contacts in the field.

Every individual has a responsibility to handle his respective duties in such a manner as to be favorable to sales, whether it be turning in a new lead, a courteous business-like phone conversation, servicing a burner, delivering fueloil, collecting an account, or the actual selling of equipment, oil or service. Everyone should become enthusiastically rededicated to the Company's main objective for being in business . . . selling at a profit.

Testimonials, oral or written, from happily satisfied customers constitute by far the greatest single source of new leads. Everyone in the organization must do his or her part in making the customer "happily satisfied," and be ever alert in seeking the names of possible new customers.

Direct incentives might well be given to general employees for sales and leads, thus making it a fixed and aggressive policy to develop more direct leads, and particularly among those who are in such frequent contact with customers as are the service men and drivers.

There is no reasonable limit to the number of competitive contests which can and should be instituted among the service mechanics, installation men and fuel drivers. There is something of the "spirit of contest" present in every individual—the desire to excel in some form of sport, to catch the largest fish, to beat opponents in a game of skill, match wits, etc. Why not cash in on these human attributes which are so manifest that we often lose sight of them?

Aside from a thing of value, cash or prizes, a great many things can be stimulated through a mental appeal. Actual competition can be stepped up through the organization of teams with appropriate extra recognition to the winners. There is an almost endless stream of ways and means whereby the winners may be recognized.

Contests should be comparatively short, lest the activity get stale or commonplace. There should be a consistent infusion of new ideas, new objectives, new methods of approach, resourceful arguments to combat opposition, more intensified digging for leads. General employees can quiz the butcher, the grocer, the milkman, their doctor, dentist or anyone else whom they may patronize. The idea of trying to get leads through a neighbor, a friend or even a chance acquaintance is certainly not to be overlooked.

In the revitalized sales campaign there should be a training program for

improving telephone technique, as an invaluable adjunct to selling. A series of tactful questions should be prepared and distributed for the guidance of all personnel having occasion to receive phone calls, particularly the "inquiry" calls and those requesting no more oil deliveries, no more service, or registering a complaint.

From a few chance observations it is apparent that incoming calls are sometimes unintentionally "muffed" through: 1) failure to get the name and address of one inquiring as to the price of equipment; 2) failure to tactfully learn the reason for "no more oil"; 3) dead pan voice and too little apparent and sympathetic interest in the caller's problem.

The local telephone company may have special facilities and personnel to work with your people with constructive coaching and cultivation of the voice inflection and other manners so helpful to build customer good will.

If this recommendation is adopted, some individual of your organization should be appointed to assume the responsibility for such training and constructive criticism as may be required.

In the oilheating industry as a whole and perhaps in your own Company much greater stress should be placed on replacements of old or obsolete equipment. Active coordination and cooperation between the salesmen and the burner service department should be specifically. required. Salesmen should be asked to methodically comb the service department record from beginning to end for prospective new equipment sales, and particularly so in all cases of really troublesome service requirements.

The soundness and urgency of vigorously adopting this recommendation cannot be questioned. Failure to do something about it is just another way of letting natural gas in the front door or the loss of an oil account to some competitor selling new oilburning equipment.

Competitive automatic heating fuels, gas and electricity, have been gaining ground at our expense. They have not decreased our oil market, but rather have slowed its growth through their novelty appeal and stronger sales promotion. Thus a company might well, while vigorously defending its present worthwhile fuel business, also sew up some secondary areas where gas lines have not been extended as yet . . . insofar as time and manpower permit.

To do this, however, by neglecting all possible action on the "first line"

Equipment salesmen should do nothing but sell; they should not be handicapped with the responsibilities of supervising the actual installation work.

would be a mistake. In every city there are still many central heating plants operating with coal. These, together with present oil accounts, should be considered the first line for intensive work. Do not scatter the sales too much through canvassing sporadically or skimming over too lightly.

The men and the Company could in all probability profit greatly from some highly specialized and competent sales training. Such a course would include studies, point-by-point, stressing the superiority of equipment, burner service, fuel service and the "know how" treatment by the Company. It should include some inspirational angles of strategy and finesse, of which there is a countless number.

Clinical discussions among the men and with management should be very constructive as well, provided meetings are not held too often and become more or less dry, perfunctory and impotent sessions.

As quickly as possible, carefully conceived and attainable sales quotas should be established for each man, for each month and for the year as a whole. These should be based upon the number of pieces of equipment or by dollar value of installed sales. The quota should also reflect the number of oil contracts or volume expected.

In addition to an incentive plan for sales compensation the Company might well consider some special award for meeting the quota, plus the possibility of a grand prize for the salesman showing the highest percentage increase over the previous year, or showing the highest percent of gross profit.

The salesmen and the management should get together about twice a month specifically for a critical review of all prospects in their respective working files. An objective discussion and interchange of ideas—and in some cases a switch from one salesman to another—should be conducive to closing more pending sales.

Incentive Plan for equipment Salesmen

The salesman shall be paid 50% of the gross margin on each equipment installation, including the oilburner or complete oilfired unit, and including accessory equipment, special sheet metal work, etc. He shall be paid $5.00 for each new oil account as evidenced by a written contract.

GROSS MARGIN

This is defined as the simple difference between the Company's authorized and contracted sales price and the total cost of the equipment installed, including:

1) Commission, if any, for the lead;
2) Cost of equipment and materials delivered to the job;
3) Cost of actual installation and shop labor plus 35% to care for transportation, fringe benefits, insurance, etc., but without general office overhead;
4) A nominal reserve to cover the cost of service or replacements under the customary one-year warranty;
5) The cost of permits, fees or special taxes as may be imposed by governmental authority.

CONDITIONS

The cost of any extras not made a part of the contract may at the company's discretion be charged back against the salesman's gross earnings hereunder.

In the event there is more than one approved claim for credit on the sale, the incentive shall be shared as the respective claimants may mutually agree, but in no event will the combined total exceed the 50% named above.

Earnings shall be computed upon the completion of installation.

Earnings under this schedule shall be considered in lieu of salary, car allowances, bonuses or any other form of direct emolument.

Any drawing account as agreed upon by the company shall be charged against the salesman's earnings as will have been accrued hereunder.

The Company reserves the right to change or supplement the foregoing awards and conditions at any time, notice of which will be posted on the Bulletin Board.

A number of interesting guides or precautions can streamline the results of equipment selling for the fueloil distributor. Basically they relate to work in the field to which all employees must lend every practical support. At the same time, sales are the life blood of any organization so it is not intended to suggest any policy or procedure that will militate against any profitable selling, in just as large a volume as can be handled.

The very way that equipment is sold, the promises made, and the time and procedures used in installation work all have a vital bearing on the practical application of the salesmen's incentive plan and of course on the profit phase.

It is not at all likely that the peaks and valleys in equipment sales will ever be levelled off, yet there are certain periods of the year when special inducements are certainly in order . . . if through them a dull month can be avoided.

When conditions and circumstances are favorable, the range of time or dates when an installation may be made should be flexible enough to advance or defer the work to suit the Company's convenience. Rush jobs should be avoided wherever possible, for they cause confusion and waste. A schedule should be prominently posted at the office, showing the approximate dates when specific installations are to be made. Great care should be used by the salesman in promising exact dates, for all too frequently there will be conflicts. All contracts should show the approximate time that has been agreed upon with the customer.

There should be a uniform price list kept current, dated, and signed by the top management for approval, and distributed to all directly concerned. All items should bear a reference number to facilitate checking, indicating on work sheets what components may have been used in the contract pricing.

A number of interesting guides or precautions can streamline the results of equipment selling for the fueloil distributor. Basically they relate to work in the field to which all employees must lend every practical support.

In the oilheating industry as a whole much greater stress should be placed on replacements of old or obsolete equipment. Active coordination between the salesmen and the burner service department should be required.

It is not to be denied that the salesman should be allowed some leeway in the pricing of jobs to reasonably meet competent competition. Any deviation from the price list should be explained. If to meet competition, the competitors should be named with the amount of their alleged quotation. Unless the contract price is literally taken from the price list, its component makeup should be shown, to facilitate checking and detailing the bill of material required.

Salesmen should be required to submit a carefully detailed survey for any and all jobs, taking particular care to list every contemplated warm air run or outlet, cold air returns, trunks and any special sheet metal work. Each item of accessory equipment should be specifically detailed.

The reverse side of the survey blank should be used for a rough pencil sketch of the physical layout of the premises, showing approximate locations as tentatively agreed, for placement of the unit, tank, and in a general way at least the preferred location for registers.

For hot water or steam installations, some reasonably accurate measurements and sizes should be shown as to the approximate length of pipe work and/or connections to the old system.

Special care should be exercised to report any physical condition that might exist which may have a bearing on the most logical assignment of the work, such as—too small passage for getting a 275 gallon tank into the basement, unexcavated spaces for warm air runs, cold air returns, removal of old equipment and any other unusual situations, the possible need of extra manpower or use of special tools or equipment on the job.

It often happens that too many such details have been left to the mechanic's judgment, thereby placing him at a disadvantage through customers insisting upon things being done in a certain way because there was not a definite and detailed understanding beforehand.

The compensation or incentive plan for salesmen can be one of many varieties. I have always preferred the profit sharing type rather than using a schedule of fixed percentages. In the accompanying box is an outline of one in successful operation today. It should be incorporated as an actual document in your own operations. Likewise is shown in a box an incentive plan for general employees to provide sales leads.

Incentive Plan for general Employees

INCENTIVE FOR LEADS*

$5.00 on conversion burners.
$10.00 on complete units, with or without duct work.

THOSE ELIGIBLE

Customers, excluding their own business.
Fueloil drivers.
Service and installation mechanics.
General office personnel.**

CONDITIONS

No recognition shall be given if the sale is for a replacement of old or antiquated equipment of an active oil or service account of the Company.

Priority of filing shall govern the ultimate eligibility.

In the case of a tie or simultaneous filing by more than one claimant, the award will be divided equally.

No recognition shall be given to anyone if the purchaser is a Company employee.

CENTRALIZED CONTROL

All leads should be cleared through . . . (designated person), who will also have custody of the file.

FILING

Make up two 3 x 5 cards for each prospect's name turned in. These should show name, address and telephone number of prospect, what he may be interested in, and pertinent information as to employment, kind of equipment or fuel now used.

The cards should also show the source of the lead and the date received. Each of the cards should be filed alphabetically, one by name of the prospect, the other by name of party furnishing lead.

*Which materialize in a sale within 90 days from filing date.

**Leads or inquiries received by telephone, over the counter or by mail are specifically excluded from consideration of awards.

Amsterdam, N. Y.

OILHEATING MARKET REPORT

A SMALL MARKET, centering around Amsterdam, N. Y., is treated herein, distinctly and separately, since it does not align with, or form a part of, any other currently active NFC promotional area. The Albany market, eastward, is the nearest one sponsoring a promotional program. At one time some interest developed in Herkimer County, westward, and a market report was prepared on that area, but the program shaping up there never materialized. Thus the Amsterdam district constitutes a small oil heat marketing "island" nearly midway between Albany and Utica.

The oil heat trading area is circular, radiating to ten or 15 miles from Amsterdam, and is served by a single newspaper. The population, including the suburban section around the city, reaches approximately 45,000. This has been fairly static in recent years. The Mohawk Carpet Company, other, smaller, manufacturing industries, commercial, retailing, and dairy farming comprise the principal economic activities.

It is estimated that there are about 13,750 dwelling units in this market, 9,500 of them in the city of Amsterdam.

Home heating Characteristics

Fuel usage, among the three principal types, breaks down as follows:

Fuel	*Central Heating*	*Non-Central Heating*	*Total*
Coal	600	1,000	1,600
Gas	3,000	2,000	5,000
Oil	5,000	1,750	6,750
Other	100	300	400
Total	8,700	5,050	13,750

It is likely that in addition to the 5,000 centrally-installed oilburners in homes there are another 300 central systems using No. 2 fueloil in small commercial establishments and small multi-unit dwellings.

Competitive Fuels and Costs

Natural gas service was introduced in this section in the Fall of 1951, by the Niagara Mohawk Power Corp. The fuel, of "not less than 1,000 Btu per cubic foot," is sold for residential space heating at rates which get down to as low as 9.5¢ per Ccf., after 4,800 cubic feet. Currently, a purchased gas adjustment clause adds .497¢ per Ccf. to this, for a minimum per therm equivalent cost of 10¢, or between 10¢ and 11¢ per therm, if there are no gas appliances such as a range or water heater installed to take up initial quantities of the fuel at higher, introductory rate brackets.

No. 2 fueloil sold last winter at a price of 15.8¢ per gallon (or about 11¢ per therm). Albany tank wagon posted price (at the time of the study) was 13.9¢ per gallon, or 10¢ per therm, making oil heat about evenly competitive, cost-wise, with gas.

Bituminous coal, at $13.50 per ton, costs the equivalent of 5¢ per therm; anthracite, at $28.50 per ton, the equivalent of 11¢ per therm.

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Fueloil Distribution

Virtually all of the tank wagon distribution of fueloil is handled by independent dealers; all wholesale volume is supplied by major companies. Maximum No. 2 fueloil market volume is ten million gallons—about 80% of this in residential business. Another million gallons of No. 1 or kerosene represents the market for this product.

Distribution and marketing Characteristics

The local marketing pattern is further revealed through the following estimates:

Total oilheating installations in market sold by:	
a. Fueloil companies	90%
b. Plumbing/heating (non-fueloil) companies	10%
Total oilheating installations in market serviced by:	
a. Fueloil companies	75%
b. Plumbing/heating (non-fueloil) companies	25%
Fueloil companies selling oilheating equipment	56%
Fueloil companies selling gasoline	22%
Fueloil companies selling coal	28%
Percent of oil customers tanks with Ventalarm	75%
Percent of oil customers on automatic delivery	70%
Percent of oil customers on budget plan	5%
Percent of installed burners receiving tune-up annually	60%

Only one fueloil company, at the time of the study, offered complete service/maintenance contracts; most fueloil companies, however, provide oilburner service. Gas burner service by the utility is limited to "maintenance of flame" and is "free" (included in rates).

Some sales emphasis is currently being put behind oilfired water heaters. As of the summer of last year, a total of more than 50 had been sold in the area.

Promotion and Organization

After a period of several years of inactivity as a group, the Amsterdam fueloil dealers held their first meeting in July, 1959. The dealer members voiced a desire to undertake a local industry promotional program to increase acceptance for oil heat. An initial subscription of $500 was raised among these dealers and the Council was called upon for assistance.

It was the opinion of the NFC staff that this amount, even if it were matched, would be too small to accomplish any constructive promotional effect, despite an unusually low local newspaper advertising rate ($1.10 per column inch). After receipt of this advice, other meetings were held and the dealers' amounts were doubled, to $1,000, to which sum was also added $974 in the Association treasury. Among 18 dealers operating in the market, 15, or 83%, supported the program (90% of the local gallonage) and, as a result of the first year's effort, it is probable the remaining dealers will join the program.

This modest, but aggressive, small campaign will do a reasonable job, it is believed, in competing against gas heat and in helping oil heat get into some of the local new home market. Promotion will be conducted under the name of the Amsterdam Oil Dealers Association.

New Torrance officials are Gilbert V. Schrock, vice president, at left, and Frank Van Doren, assistant vice president. Schrock has been associated with the company for 13 years, most recently as sales manager, and Van Doren was formerly fueloil manager for Standard Oil Co. of Ohio in Cleveland. Torrence Oil Co., Birmingham, Mich., will soon have its office and oilheating displays moved into the building below. The company is Michigan's largest independent fueloil distributor and serves Oakland and Macomb Counties.

WHY OIL HEAT IS

Best for Schools

by A. J. Becker*

OILHEATING is a vast industry running to a total of about $3 billion annually in this country. Counting heating of homes as well as other buildings, some 65,000,000 Americans are kept warm every winter by oil heat. Oil, because of its great popularity in the cold winter states, supplies a third more energy units than gas and three-quarters more than coal and other fuels, to keep all Americans comfortably warm. As a matter of fact, modern automatic heat as we know it today, was created by the oilheat industry, and our record of performance and improvement of product and equipment is not excelled by any fuel.

Oil therefore has a proven record of know-how in heating. I think I can also say accurately and fairly that in the heating of large buildings—and probably most typically in schools—oil has a very attractive story for users, quite possibly its best story in the heating field.

All heating oils are natural fuels refined for their particular use from the product as it originally comes out of the well. For the heating of large buildings we have three grades whose burning characteristics are scientifically designed to fit all installations from a very small building to a very large institution. These grades are, first #2 oil such as you use in your home and in buildings requiring up to perhaps 20,000 gallons a year, and second #4 oil which is a later product of refining and has more heat per gallon than #2 oil. It costs less per gallon and is designed for installations using 20,000 gallons a year up and burns in more expensive equipment.

Our third product is #6 or residual oil. This is the end product of refining. It has the highest heat content per gallon and the lowest price. In fact, it most often sells for less than the crude oil from which it was made. No. 6 oil is designed for large buildings and power plants and it requires a somewhat larger investment in burning equipment.

A variation is #5, a light residual oil burned in similar equipment to #4 and comparably priced, it has similar combustion characteristics. This product has wide application in the Midwest.

The chief advantages of oilheating for schools, for the communities, for the great numbers of children who require comfortable, reliably warmed buildings can be stated:

An up-to-the-minute Analysis of our Position applicable to Schools and all commercial Jobs

Economy. In dealing with public or semi-public funds the first consideration must be economy commensurate with performance. Oil heats school buildings in general at a materially lower net cost than other fuels. We shall develop this more fully a bit later —for the moment consider that such savings over the life time of a heating system can total a tidy sum for any one school and reach considerable sums for an entire school system.

Cleanliness. Cleanliness is important in school operation. This is primarily controlled by the amount of carbonaceous material in the atmosphere in the building. Heating plants contribute to this in two ways. First, by way of contamination in the boiler room area, by coal dust or ash, getting into air moving through the building—which cannot happen with oil. Second, by pollution through the chimney of the air surrounding the building. Here, even the largest oil installations are smokeless when properly adjusted and operated. Oil Heat is not an offender on either score—it is clean burning.

Dependability. Oil is a concentrated fuel that permits storage of an adequate supply for a long period of time in a comparatively small space on your own property, with no manpower required to transport it to point of consumption. The product is in abundant supply and from many different competing sources. Its use is not subject to the hazards of interruption inherent in fuels that are brought to the school in a single supply source and then cannot be readily stored in volume—in bulk storage plants or on school property. The fact that oil is supplied by individual competitive dealers assures a choice of supplier and of service, as well as genuine competitive bids.

Stability of Price. A study of heating oil's price trends is interesting for those who must budget and pay the costs of school building. The United States Government Bureau of Labor Statistics shows the most recent indices for wholesale fuel prices as of July, 1960, compared with a base of January, 1958 equaling 100 as follows:

Bituminous Coal	96.
Anthracite Coal	93.
Natural Gas	125.
Electricity (commercial)	102.
Distillate Fuel Oils (Fuel Oil No. 2)	89.5
Residual Fuel Oils (Commercial Grades)	87.

Schools and school systems certainly should buy in full transport truck loads where prices fluctuate with wholesale postings, and the commercial grades of heating oils show a distinct tendency to rise in wholesale price at a lower rate than any of the other fuels. They should therefore be able to benefit by the decline in recent years of the wholesale price of heating oils—a decline of 13% for the commercial grades and 10.5% for No. 2 oil. Coal during this period has also declined in wholesale price—but by less. Electricity has gone up somewhat. Gas has gone up by 25%.

*Chairman of the Fuel Oil Committee of American Petroleum Institute and president, Becker Marsden Co., St. Louis. This paper was prepared by Becker in cooperation with the National Fueloil Council and was presented before the Association of School Business Officials of the United States and Canada, on October 10 in St. Louis.

Three thousand copies of the paper have been distributed to school officials and oil industry groups. Additional copies may be had by sending $1 in advance for each dozen copies wanted to the National Fuel-oil Council, 424 Madison Ave., New York 17, New York.

No one, of course, knows whether these price trends indicated for the past will continue to keep their same relationship. It is widely believed of natural gas, for instance, that its price will go up sharply. *Fortune Magazine,* reviewing the gas industry in its September 1959 issue stated that it was the conviction of the gas producers' themselves (I quote) that the price of natural gas is unconscionably 'low' and should be raised. . . . Gas prices, unlike those of oil which both rise and fall, have never shown a disposition to go anywhere but up. (end quote) On the other hand, the oil industry believes that dominant factors of the future will, if anything, exercise a trend in the reverse for commercial heating oils.

There is a world-wide and U. S. over supply of petroleum being produced, as well as in the ground in proven reserves. There is little long-term pressure for higher prices. On top of this oil is one of our least expensive mass products to distribute from its origin to its point of consumption. The means of distribution are many—pipeline, tank car, tank trucks, and river and deep water tanker. As an example, in most cities it costs one-fourth as much to deliver a Btu of oil from the wellhead to the consumer as it does a Btu of natural gas.

Flexibility of Operation. The fuel selected must lend itself to modern concepts of heat control, including zone control for different areas of the school building at different times. Basic to this is the fact that the fuel must have the capacity to ignite in a previously cold heating plant and accelerate to full fire in a matter of minutes with modulation of fire to any intermediate setting selected by automatic controls. It should further be possible to completely interrupt firing within seconds should safety controls indicate any subnormal condition. Fueloil completely meets all of these requirements.

Safety. All of the generally burned fuels are safe under normal operation. The reverse is also true—that all fuels or methods of heating, without exception, can, if not installed or handled properly, lead to an accident of some nature. The same thing, of course, can happen with any appliance operated in a building. The figures collected nationally on building fires are a very unclear index here because they are so grossly collected by local officials and loosely assembled by the issuing organizations that different fuels or different types of the same fuel or methods of burning with or without automatic controls are unceremoniously lumped together. The kerosene range burner for cooking in houses and the largest industrial heating plant, for example, are considered indistinguishably in some statistics.

The thing to remember is the plain and simple fact that oil has high relative safety under all circumstances reasonably approaching good practices. All the heating oils are by nature non-explosive. In fact they may safely have a lighted match dipped into them. In addition, operation of the entire heating plant is safe-guarded by a series of interlocking automatic controls. Heating oils are completely non-toxic—they have no inherent fumes dangerous to health.

Now let's look at the factor which is no doubt basic for most school authorities and will become even more so with the future rising costs of building. I refer to the increase in number of pupils and schools, and the almost skyrocketing costs (including payrolls) of education to the community and nationally. Quite simply, I would like to stress the dollars and cents factor of heating. The common sense way to view this is in terms of the lifetime of the building to be heated.

The real meat of the cocoanut is wrapped up in the fuel cost. What are the facts? How do we arrive at a true comparison of the cost of heating with diffent fuels? Such a consideration must in general include the following contributing factors:

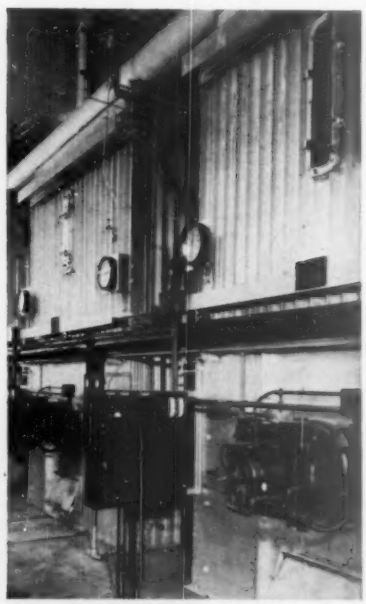
1. The initial cost of a Btu of heating value of the fuel.
2. The efficiency of operation. This is the percentage of the available heat units or Btu's purchased that are actually released as heat in the building.
3. Labor for firing the fuel.
4. Maintenance charges.
5. Electrical charges for running burner motors, blowers, pumps.

6. Amortization charges to equalize any difference in the initial cost of equipment.

Unit Cost and Efficiency. There is really nothing complicated about the question of efficiency of operation. It involves two considerations. First, the amount of heat that is absorbed in the boiler or furnace as compared with the amount of heat available in the fuel being burned. Second, the difference between the amount of heat contained in the steam water or air leaving the boiler or furnace, and the amount of heat that is actually delivered by this medium in those parts of the building to be heated. The first accounts for losses up the chimney and radiation of heat from boiler to the boiler room, and the second takes care of transmission loss from piping in the basement.

In the tables (for gas and oil) we have set 75% as combustion efficiency, less an additional loss of 10% for transmission. Combining these two we arrive at 67½% of available heat in the fuel released as effective heat in the building.

Incidentally, in almost all modern installations, the efficiencies for each of these fuels will be markedly higher.



At the St. Louis Airport building for example, my company installed combination oil and gas firing equipment for the City of St. Louis. Specifications required an efficiency test by outside experts to determine the percentage of available heat input in the oil actually delivered as steam at the boiler outlet. These tests were made for both gas and oil. The result showed 80% for both gas and oil. Again, at the low income Darst housing project recently completed in St. Louis, similar tests on gas and oil with the boilers being operated at 200% of boiler rating, showed gas 75.39% and oil 77.40%. At normal rating these would have been at least 80%. The point is, that oil must be rated for at least equivalent efficiencies with any of the other natural fuels and that 75% combustion efficiency is conservative.

In the tables we have assigned an efficiency of 100% to electric heating assuming that direct resistant heating units would be installed in the area to be heated. It could be argued that 100% efficiency is never realized. Be that as it may, the cost of electric heating is comparatively so high that the oil industry can afford to be generous in making comparisons.

One additional large factor in connection with electric heat . . . because of the extremely high cost of a unit of electric heat it is imperative that the building so heated have maximum insulation against heat loss including double pane windows. Actual experience has indicated that it may require as much as 33-1/3% more heat output from other fuels to make up for this special and more expensive insulation required for electric heating. This consideration has been included in the comparison tables.

The tables are therefore based on the concept that it will require the release of four Btu's of combustible fuel energy for oil and gas heating to accomplish the work of three releases of electric heat. That is, for a million Btu output for gas and oil, only 750,000 will be required with electricity. By output I mean the amount of Btu's actually delivered to rooms. By the word input I mean the amount of heat units or Btu's initially present in the fuel. Operating at a net total efficiency

A. J. Becker

of 67½%, it would then require 1,481,481 Btu input to produce the million Btu output required with gas or oil. Operating at 100% efficiency, it

TABLE I
Cost per Million Btu Input Oil Energy

Price per Gallon	*No. 2 139,000 Btu*	*No. 4 or 5 148,000 Btu*	*No. 6 150,000 Btu*
$.05	$.3597	$.3378	$.3333
.06	.4318	.4054	.4000
.07	.5036	.4730	.4667
.08	.5755	.5405	.5333
.09	.6475	.6081	.6000
.10	.7194	.6757	
.11	.7914	.7432	
.12	.8634		

TABLE II
Cost per Million Btu Input Gas Energy

*Price per Therm**	*Natural Gas Cost*
$.04	$.40
.05	.50
.06	.60
.07	.70
.08	.80
.09	.90
.10	1.00

*100 M Btu.

TABLE III
Cost per 500,000* Btu Input Electric at 3413 Btu per Kw

PRICE	
Per Kwh	*Per 500,000 Btu*
$.005	$ .7325
.010	1.4650
.015	2.1975
.020	2.9300
.025	3.6625
.030	4.3950

*500,000 Btu electric input used because of the 2 to 1 ratio established between input of electric heat and input of oil and gas—see "Unit Cost and Efficiency."

would require 750,000 Btu's input to produce 750,000 Btu output with electricity. An input of 1,481,000 against 750,000 is a ratio two to one.

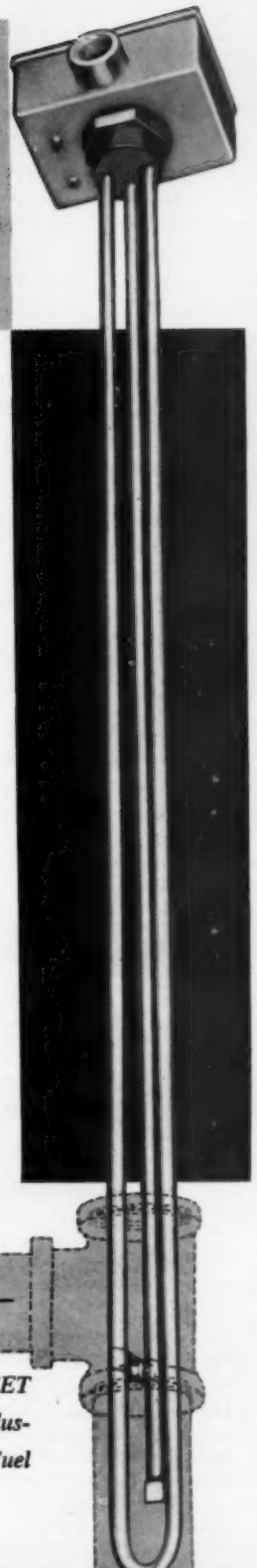
The tables accordingly show the cost of a million Btu input for the three grades of oil at various prices per gallon, and likewise, the cost of a million Btu input for gas at various prices per therm. (A therm of gas is 100,000 Btu's. If your price for natural gas is based on a cubic foot of 1,000 Btu gas, you need merely multiply this rate by 100 to arrive at the cost per therm.) In the case of electric heat the table shows the cost of 500,000 Btu input (the 2 to 1 ratio) at various kilowatt hour prices.

We have not attempted to cover coal in the tables because we do not find this fuel to be economically competitive, except in limited areas. Further, it would be difficult to set up a simple table to fit coal because of the wide variation in heating value per pound in the assortment of coals available in each area. Notice that for a quick check you need merely apply your local price per unit of oil, gas and electricity to the respective tables, and the figures then show the comparative cost of fuel with each of the mediums.

Labor for Firing. There is, of course, no labor involved in firing any of the fully automatic fuels under consideration here.

Maintenance. The time which is required for men already in the school's employ for operation of oil or gas equipment is so minor that it is difficult to evaluate. Ten to 20 minutes a day would be liberal. All specialized service attention required throughout the heating season, including a summer check up and lubrication of the equipment can be purchased in most metropolitan areas at a yearly contract cost of $35 to $50 per oilburner. The same attention for gas would be no more. As for replacement of such items as refractories, electric controls and motors, any school system that has used oil or gas will tell you that such maintenance costs are a relatively small item. If you assume that there never will be repairs or replacements on an electric heating installation you, of

FITS TO A TEE...



Immersion Heaters Fit Inside Suction Stub . . . Automatically Keep Fuel Oil at Pumping Temperature!

Easy installation . . . in tee at top of suction line . . . no need for large openings to enter into tank or running costly steam lines.

Automatic, self-tending Type WTSB electric immersion heaters . . . low watt density units . . . available in many models . . . suit most installation requirements.

Can be located under manhole covers or in other difficult access locations.

Quality construction assures years of trouble-free operation . . . with absolute safety . . . even without oil in line.

Integral-mounted thermostat designed for long life . . . no vibration failures.

Standard models . . . 115, 230 or 460 volts AC . . . for single phase operation . . . no contractor required.

***For complete details,** request DATA SHEET EH-106 or Catalog EH-100 describing Industry's broadest line of Fuel Oil Preheaters.*

GENERAL FITTINGS COMPANY

EAST GREENWICH • RHODE ISLAND

course, are not being realistic. Those of you who have had experience with electric resistance heating units, in appliances know that in time such elements have to be replaced. You are bound in time to face some of the same in electric heating installations.

Electric Energy for operating Oil & Gas Burners. Electric charges for operating oil and gas heating units are part of the cost of annual operation. The electric demand of a well known 300 hp boiler, available with both gas and oil firing, requires 9 kilowatt for gas and 11 kilowatt for oil. Using 2,000 hours of operation at 1½¢ per kilowatt hour the annual charge would be $270 for gas and $330 for oil. These costs, of course, would be less for smaller boilers.

Amortization of Differences in building Costs. Now we come to the matter of differences in initial cost of buildings equipped to burn different fuels. There is in general no substantiation of the claim that it costs less to build an electrically-heated school than an oil or gas heated school, except as noted for the oil storage tank. In fact there are many instances where the total construction cost with electric heat are in excess of those for oil. There is a tendency by interested salesmen to forget the necessary increase in insulating cost for electric heating and compare only the bid for the electric heating equipment with the bid for the installation of the conventional heating plant fired by one of the other fuels. The real answer is to design the buildings both ways and actually obtain bids for each. Oil does have an additional cost above electricity and gas of approximately $2500 which is primarily a matter of the large oil storage tank. Amortized over 25 years at 4% this equals $152 a year.

Now let us use the tables and then add these additional costs to compare total costs for a typical proposed high school requiring an input of 26 billion Btu's of gas or oil, or an equivalent 13 billion Btu's input of electric energy. Let's assume that the cost of No. 4 oil is 9¢ a gallon, gas is 7¢ a therm, and electricity is 1½¢ per Kwh.

#4 oil	.6081	x	26,000	or $15,810.60
gas	.70	x	26,000	or $18,200.00
electric	$2.1975	x	13,000	or $28,565.50

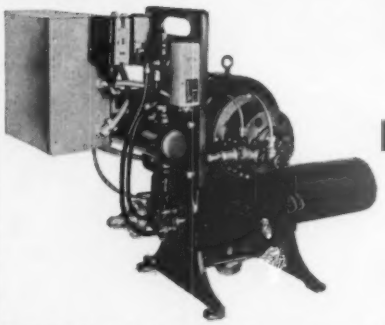
If we now add $152 amortization for the additional cost of the oilburning equipment and $330 and $270 respectively for the cost of electric power for the oil and gas installations we secure the figures in TABLE IV.

TABLE IV

	Fuel Cost	*Amortization*	*Electric*	*Total*
No. 4 Oil	$15,810.60	$152	$330	$16,292.60
Gas	$18,200.00		$270	$18,470.00
Electric	$28,565.50			$28,565.50

In obtaining local fuel prices do not merely call some oil company and ask for the price of No. 4 oil, but likewise ask the unit price of gas and electricity at your utility company. In the case of oil you would be likely to obtain the tank wagon price which would apply to deliveries to a 1,000 gallon tank. School installations should be equipped

No. 4 OIL BURNER by ELECTROL fully automatic



ELECTROL HO Series Oil Burners are designed specifically to burn No. 4 fuel oil and feature:

- No moving arms and rods, special pumps, or heaters.
- Famous Electrol Cut-off Valve prevents after-drip.
- Hot oil at nozzle on every burner start.
- Standard stock items—heater, controls, valves, nozzles, pump, etc.
- Three models, 2 to 20 gph.

and . . . the finest and most complete line of #2 oil burning equipment including warm air furnaces, boilers and water heaters, from .75 to 24 gph.

Write for "HO, No. 4 Burner" literature, or on any oil burner problem.

ELECTROL BURNER MANUFACTURING CO., INC.
RUTHERFORD, NEW JERSEY

Dewey **SAFETY AIRFLOW AND PRESSURE SWITCHES**

World Leader for Dependability

"D" Series Switch shuts off fuel if drop in fluid or gas pressure occurs.

"114" Series Switch shuts off fuel if blower fails.

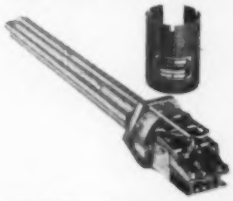
Thousands sold. Factory Mutual and Underwriters Laboratories Approved. Standard equipment on leading products. Write for prices and literature.

FREE CIRCULAR—

Dewey Gas Furnace Co.
102 E. Baltimore • Detroit 2, Michigan

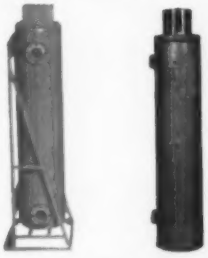
PROTECTION FOR: Oil Burners—Industrial Ovens and Boilers—Power Gas Burners

VULCAN
ELECTRIC HEATERS
DESIGNED FOR EVERY
HEAVY FUEL OIL
APPLICATION

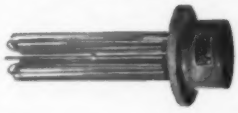


AUTOMATIC TAILPIECE HEATERS

AUTOMATIC RETURN LINE HEATERS



CIRCULATION HEATERS



AUTOMATIC SUCTION LINE HEATERS

VULCAN "MINIWATT" HEATERS

The Vulcan Line represents the most complete and up-to-date range of electric heating elements available to the oil burner industry.

Write for new fuel oil heater catalog V.O.700.

VULCAN

Versatility in Electric Heating

Vulcan Electric Company, Danvers, Mass.

with tanks not smaller than 10,000 gallon capacity so that you can receive full transport loads in quantities ranging from 4,000 to 6,000 gallons. Such loads are generally handled direct from refinery or large water terminal to consumer and can be delivered at a much lower cost than products which must be re-handled at bulk plants and hauled in city trucks, designed to make numerous smaller deliveries. Likewise, the utilities may have a much lower rate for space heating than their general rates, and you of course would be entitled to those rates.

Best of all, ask representatives for each of the fuels to submit a proposal outlining why you should select their product. Give each of them an opportunity to criticize the proposal of their competitors. When you get through, you can be reasonably certain that you have the real facts and the best answer.

Fallacy of Experts

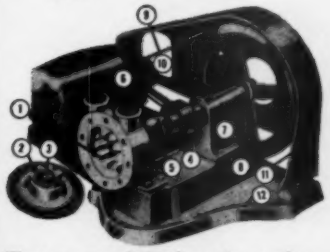
You might say that a school board hires an architect, who in turn hires a consulting engineer, who recommends the mechanical equipment that should go into your schools. That such men know much more about these problems than do school administrators, is neither always true nor practical. Witness the fact that in a given area, two competent consulting engineers will not select the same type of heating for similar schools.

In any event, both of the engineers can't be right. One of them, for example, may have formed a prejudice because of some long standing experience that may no longer be valid. You should satisfy yourself on the score that what you buy is best for your schools. This is mighty simple to do with the tables available herewith. You should at least make a reasonable check and then discuss what appears to you to be the answer with the mechanical engineer who makes your plans.

In closing, I want to repeat that the oil industry does not attempt to say that oil heat is the most advantageous answer to every school heating problem in every locality, but I will say that a very large percentage of school boards will find, if they get the facts, that oil is the most advantageous method of heating schools.

KRAISSL PUMPS

CLASS 60
REDUCTION UNITS
for
rotary burners



These pumps have been in service for many years for direct supply or booster pumping of heavy oil. Slow speed operation reduces cavitation. Outboard ball bearing unit increases pump life by isolation of pulley load. Capacities 130-2700 GPH; pressures to 100 psig.

√ √ **THESE FEATURES . . .**

1. Internal gear design provides high suction lift characteristics.
2. Hardened idler insures minimum wear.
3. Cap screw closure with steering permits easy access to pump interior.
4. Adjustable stuffing box fitted with return seal and soft packing keeps shaft wear and chance of leakage to a minimum.
5. Interchangeable return seal design allows change of rotation in field.
6. Flexible coupling isolates pump bearings from pulley loads.
7. Rugged ball bearing unit insures bearing alignment and large grease reservoir with provision for relubrication minimizes maintenance.
8. Bearing unit support cast integral with bed plate reduces vulnerability to distortion.
9. Adjustable V-belt drive absorbs shock loads and provides quiet operation with low replacement cost.
10. Varied pulley combinations for proper viscosity — speed relationship.
11. Cast iron belt guard protects personnel from exposed moving parts and eliminates chance of bending, denting or sharp edges.
12. Cast iron bed plate with drip collecting bead around edge insures rigid support and minimum chance of bed plate bending or distortion.

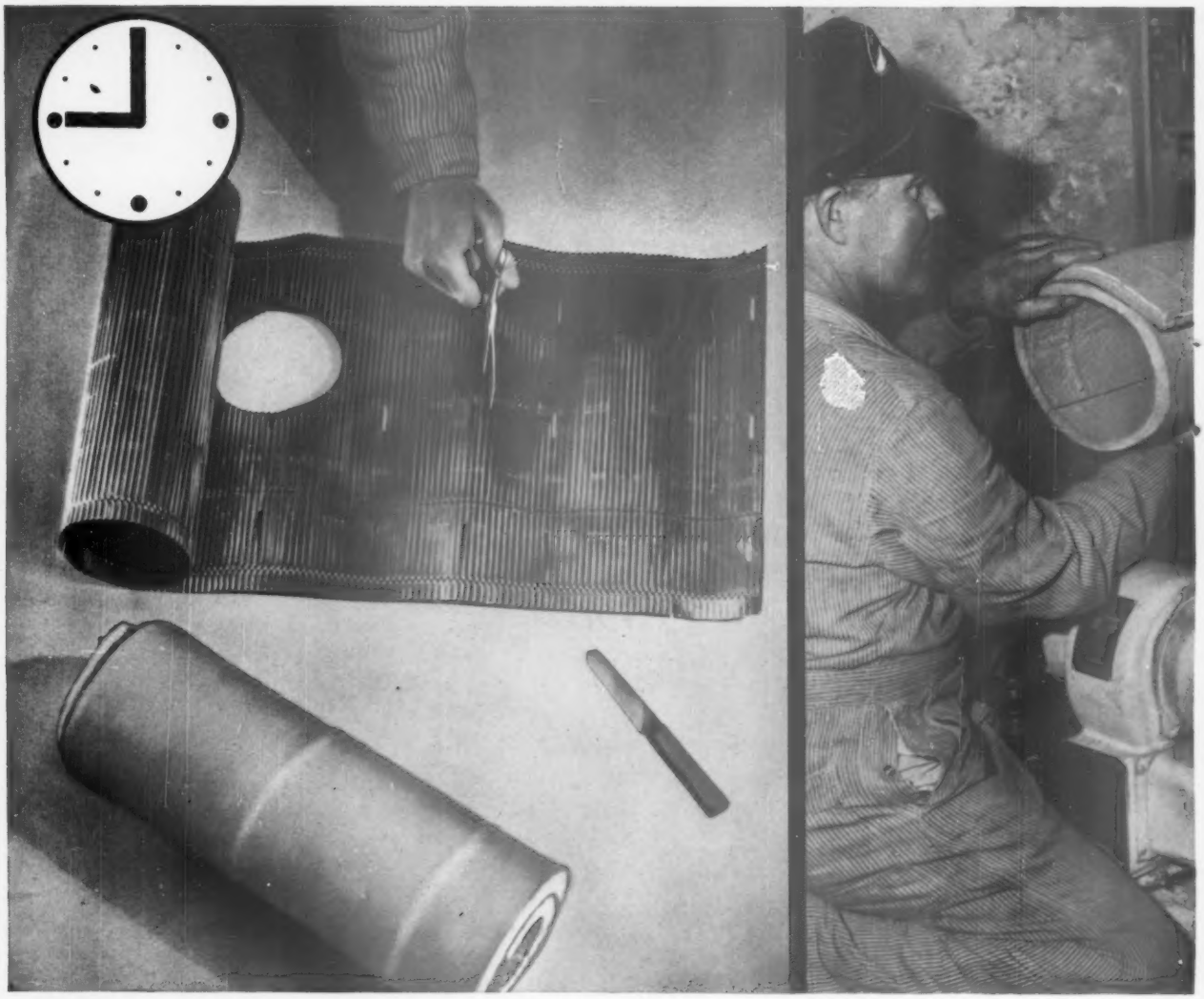
Write for Bulletin A-1193

Protect your fuel oil pumps with Kraissl strainers.

Write for Bulletin A-1430.

KRAISSL CO. Inc

295 Williams Ave., Hackensack, N. J.



Just scissors...a knife.

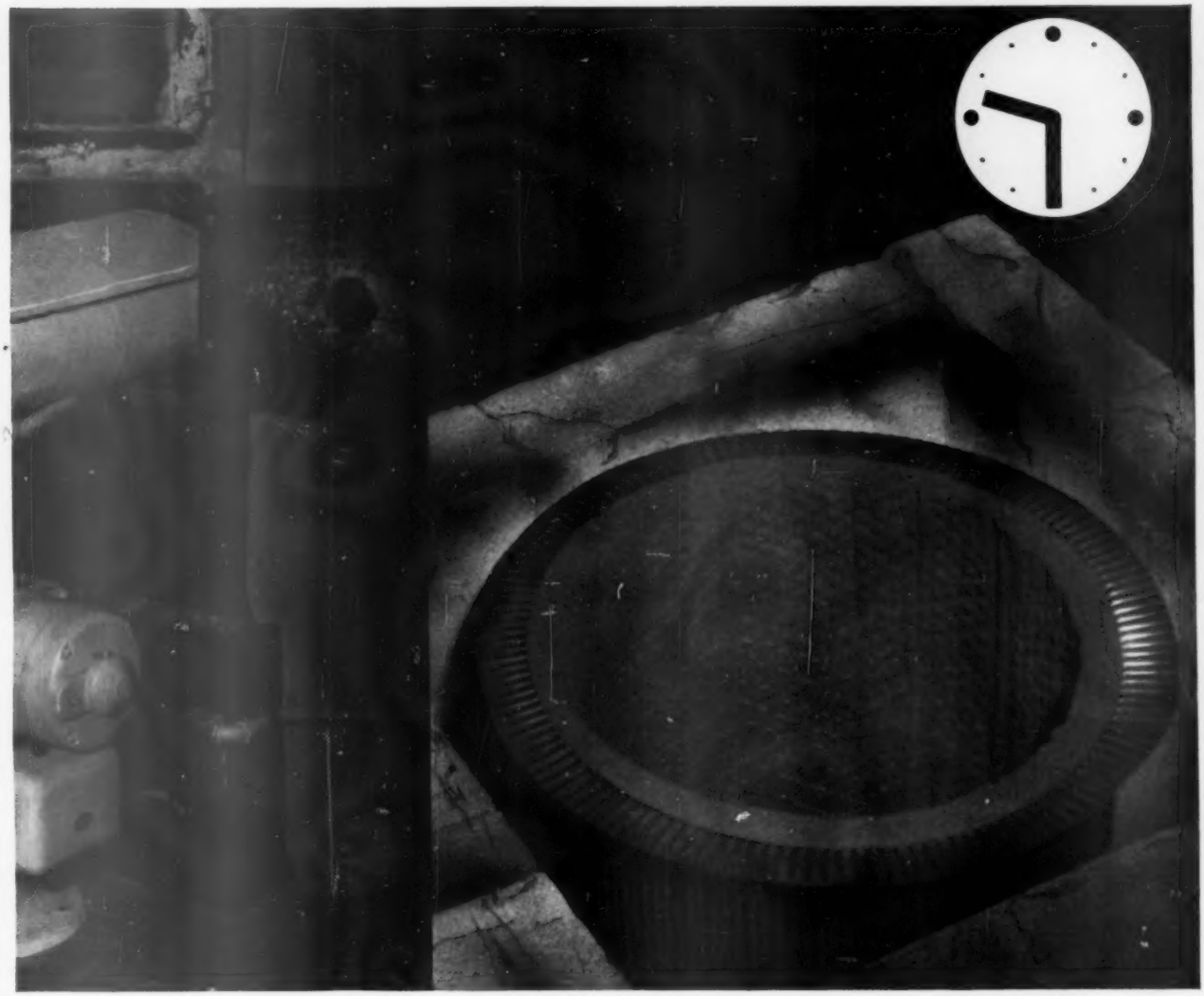
THAT'S ALL YOU NEED TO RELINE A COMBUSTION CHAMBER WITH NEW JOHNS-MANVILLE CERAFELT®

One man can install this 4½ lb. Cerafelt chamber in just 30 minutes, using the simplest of tools. When you compare this with the usual 5-hour job that can involve up to 200 lbs. of bricks and mortar—you can readily see that here's a product that *lets you make money on service!*

LOOK AT THESE CERAFELT FEATURES:

- *Quick Installation—simple tools suffice*
- *One Size Fits All—you can reduce your inventory*
- *Weighs Less—only 4½ lbs. and all in one handy kit*
- *No Mess—leave the old chamber right where it is*
- *Unbreakable—no damage during shipment or storage*
- *Makes costly return trips unnecessary*

And that's not all! Your customers will get clean, near-perfect combustion that saves up to 20% on fuel bills. Chamber temperature is as much as 300 F hotter...soot, smoke, odor and noise are reduced to virtually nothing. A Cerafelt chamber



..and 30 minutes!

lasts indefinitely...is unaffected by moisture...and heats to maximum refraction in 10 seconds. It also permits reduction of chamber size to 70 sq. in. per g.p.h. nozzle fire. A Cerafelt installation will pay for itself the first year!

Why not let Cerafelt chambers take the loss out of maintenance and put profits in your pocket? Use the handy coupon to find out more about this profitable Johns-Manville line.

Johns-Manville
Box 14
New York 16, N. Y.
Gentlemen:

☐ Please rush more information about Cerafelt Combustion Chamber.
☐ Send name and address of nearest J-M Distributor.

NAME_____

COMPANY_____

STREET_____ CITY_____

COUNTY_____ ZONE_____ STATE_____

JOHNS-MANVILLE

AN INSULATION FOR EVERY COMMERCIAL AND INDUSTRIAL USE

JOHNS-MANVILLE JM PRODUCTS

fuel oil & oil heat

Talking to customers about firebox installation?

Point out that

B&W IFB

also means savings

In Fuel Bills

Here's a "dollar-and-sense" sales story on firebox installation that will help your customers save 15-25% in fuel bills. That's how much B&W Insulating Firebrick, *the lightest insulating firebrick made,* can cut fuel bills each year.

The reason? B&W IFB have millions of tiny air cells that impede the flow of heat. As a result, these brick come up to operating temperature faster. Heat is held inside the combustion chamber. That means lower fuel bills, more complete combustion, clean and odorless heat.

Increase your sales and profits by telling your customers the benefits of B&W fireboxes. It's an effective way to build your reputation in a community.

A Valuable Guide for Every Installer

Send today for this Handbook!

R-625

THE BABCOCK & WILCOX CO.

Refractories Division

Works: Augusta, Ga.

General Offices: 161 East 42nd St., New York 17, N. Y.

NEW PRODUCTS

HRB-Singer Computer measures Weather and aids fueloil inventory Control

THE WEATHERAC COMPUTER includes a fuel use totalizer, the CONSUMaSCOPE, which continually indicates gallonage of fueloil customers over a selected period of time. By comparing total gallonage consumed with the number of gallons delivered to customers over the same period, the dealer can tell if his deliveries are ahead or behind customer demand.

Weather conditions are measured by a compact roof-top unit that integrates atmospheric conditions consisting of temperature variations, sunshine, clouds, winds, snow and rain, and relays this data to the recording unit in the office.

Made by: HRB-Singer, Inc., 475 Watchung Ave., North Plainfield, N. J.

Iron Fireman manufactures Series of WhirlPower package Generators

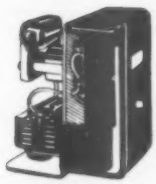
SERIES 33 package generators have been designed by Iron Fireman for commercial and light industrial installations. The WhirlPower is a three-pass low pressure steam or hot water firebox unit that employs the principles of sealed combustion and forced draft. It has a rated steam or hot water output of 355,000 Btus to 2,009,000 Btus or from 10.6 to 60 hp.

The unit comes completely assembled. The combustion system of the steel firebox boiler is pressure-sealed and because the burner uses forced draft, the generator does away with the chimney.

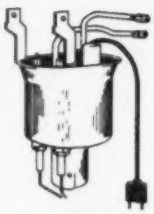
Made by: Iron Fireman Manufacturing Co., 3170 W. 106th St., Cleveland 11, O.

WE'RE GETTING THE G-E BUSINESS

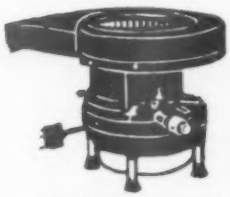
(And It's Nice Business Too)



MASTER CONTROLS
(New & Rebuilt)



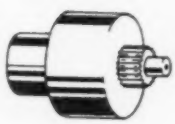
BURNER HEAD ASSEMBLIES
(Rebuilt)



MOTOR COMPRESSORS
(Rebuilt)

FLAME DETECTORS
(New & Rebuilt)

STATORS
(Rewound)



ROTORS
(New)

QUARTZ ROD
(New)

HEAT ELEMENT
(New)

SHIELD
(New)

IGNITORS
(New)

NOZZLE WRENCH

GAGE GLASS
(New)

G-E SERVICE HANDBOOK
$3.25

See Sid Harvey's catalog for a complete listing of all G-E parts.

BECAUSE WE'RE USING SID HARVEY'S REPLACEMENT PARTS

You can get the G-E business, too, when you have the parts. Sid Harvey's has everything you need, both new and Sid Harvey rebuilt.

NO WAITING

Sid Harvey's has rebuilt G-E replacement parts for Immediate Exchange, for both current and obsolete models. No waiting, no delay, you'll get the part you want, when you want it.

COST LESS

Your profit is greater because Sid Harvey's Rebuilt Parts cost less, about half the price of new, in most cases . . . yet they carry the same guarantee.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

AVAILABLE AT 50 SID HARVEY STORES OR BY MAIL

FOR MAXIMUM HEATING
OR EXHAUSTING EFFICIENCY
AT LOWEST COST

...Specify

Patents 2,722,372 and 2,855,874 and Patents Pending plus Exclusive Foreign Patents.

Quickdraft

POWER-DRAFT UNITS
DESIGNED FOR RESIDENTIAL,
COMMERCIAL AND INDUSTRIAL
APPLICATIONS

★ No motors, fans or bearings in exhaust line ★ Needs no stacks ★ Acid-resisting vitreous enamel finishes ★ Extremely high static pressures now available

FOR HEATING PLANTS AND INCINERATORS . . . *Quickdraft* provides constant draft for efficient and economical combustion. It eliminates pulsating or chattering, puffing, smoking and sooting. Costly, tall, unsightly stacks are unnecessary.

FOR INDUSTRY . . . *Quickdraft* now offers extremely high static pressures for EXHAUSTING corrosive gases, abrasives and paint sprays . . . for CONVEYING all types of bulk materials or wastes that can be moved by air.

FOR MOVING AIR in or out of buildings through ducts . . . *Quickdraft* is outstanding in performance and efficiency.

9010-QD

IMPORTANT NOTICE

To withstand corrosive gases, all *Quickdraft* units are available in standard acid-resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (P. V. C.) and with plastic and Fiberglass coatings.

Write today for Quickdraft Engineering Data.

Quickdraft CORPORATION

P. O. Box 87-F
Canton, Ohio

Rinco markets damper Regulator for simplified air Balancing

TRIM-LOK by Rinco has been designed to set manual dampers in any desired position. It is fabricated of rust-proof 24-gauge steel. Attachment is by means of three sheet metal screws.

The damper blade regulated by TRIM-LOK is installed parallel with handle, which visually indicates the exact position of the damper at all times. While balancing the system, an extension handle is available to change damper setting on high locations without the use of ladders.

Made by: Rinco, P. O. Box 453, Altadena, Calif.

BVI Constant-Comfort Humidifier is installed on cold air Duct

EQUIPPED with all controls and accessories, the Constant-Comfort furnace humidifier can be installed on the cold air duct of any warm air furnace up to 125,000 Btu. The unit is fully automatic in operation and disperses seven gallons of moisture a day through the ducts.

The humidifier is equipped with a Bendix Friez humidistat that can be set for any humidity level. A silicone-coated filter helps keep air clean and resists clogging.

Made by: Burgess Vibrocrafters, Inc., Grayslake, Ill.

"I always wonder if they'll still be around when we send our bill."

BURROUGHS ACCOUNTING MACHINES ON DEGREE-DAY OPERATION PREVENT RUNOUTS

The scene: Springfield, Massachusetts, where Swett Bros., Inc., operates a 4-million-gallon fuel oil business. **The job:** combined degree-day accounting and accounts receivable. **The equipment:** two Burroughs Sensimatic Accounting Machines. **The result:** President R. K. Swett reports, "These fine accounting machines broke through our seasonal 'log jam' of paperwork. We now handle twice as many accounts as before, with the same help. The work load has leveled off. We can handle another thousand accounts. Most important, we have no runouts. Drivers return empty from properly dispatched runs."

R. K. Swett

Burroughs and Sensimatic—TM's

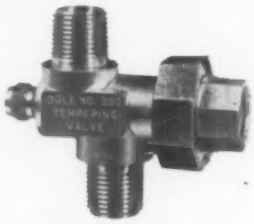
Swett Bros. is one of many fuel oil companies helped to peak efficiency and data-processing economy by Burroughs office automation equipment. For details, action—and results—call our nearby branch now. Or write Burroughs Corporation, Detroit 32, Michigan.

Burroughs Corporation

"NEW DIMENSIONS / in electronics and data processing systems"

Dole tempering Valve is adjustable from 120 degrees to 160 degrees F

A LOW-PRICED tempering valve which is adjustable from 120° to 160° F has been announced by Dole Valve Co. The No. 300 valve mixes hot and cold water to produce properly controlled mixed water. When desired, 100% hot water can be by-passed to a washing machine or dishwasher.

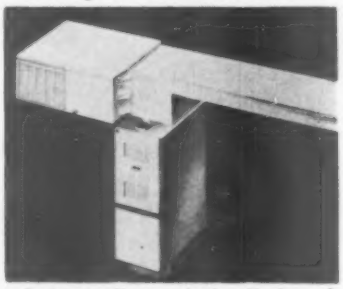


Two of the connections can be used with either ½" iron pipe or with ½" copper tubing.

Made by: Dole Valve Co., Morton Grove, Ill.

Coleman Polar-Solar Pak provides combination Heating and Cooling

THE COLEMAN Polar-Solar Pak is a heating and cooling system consisting of a 2 or 3 hp self-contained, air-cooled cooling section short-coupled to a forced air furnace. If the furnace is placed near an outside wall the need for refrigerant lines, transition ducts and a special blower in the evaporator section of the cooling unit is eliminated.



An extra large, low resistance evaporator coil is sized to the furnace blower. The cooling section features: a refrigerant stabilizer, filter-drier, low pressure switch, acoustically-treated cabinet and weatherproofing.

Made by: The Coleman Co., Inc., Wichita 1, Kan.

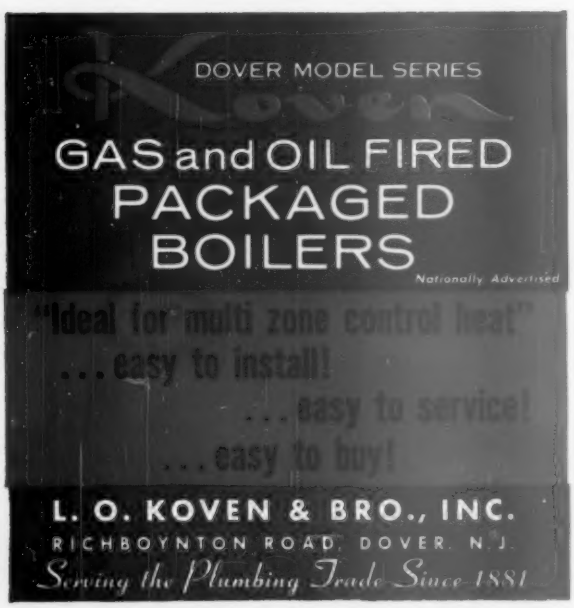
Carlin Oilburner is designed for narrow combustion Chamber

ESPECIALLY developed for efficient firing in narrow, low combustion chambers is the new oilburner designed by Carlin. Model 1200N has a firing range from 6.00 to 10.00 gph and features a narrower, higher velocity air stream with conforming oil spray pattern.

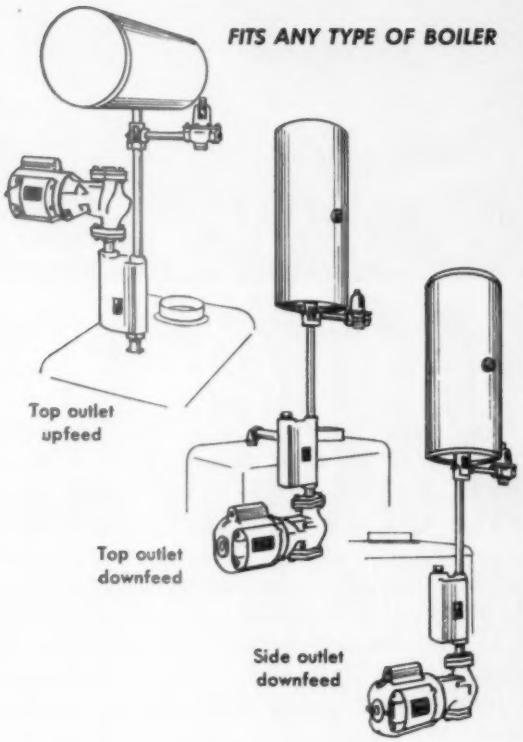
According to the manufacturer, efficient fires can be developed at full firing capacity in a chamber 19" wide x 34" long x 18" high with floor-to-nozzle distance of 9". The 19" width can be maintained throughout the firing range and the 18" height is adequate for most installations.

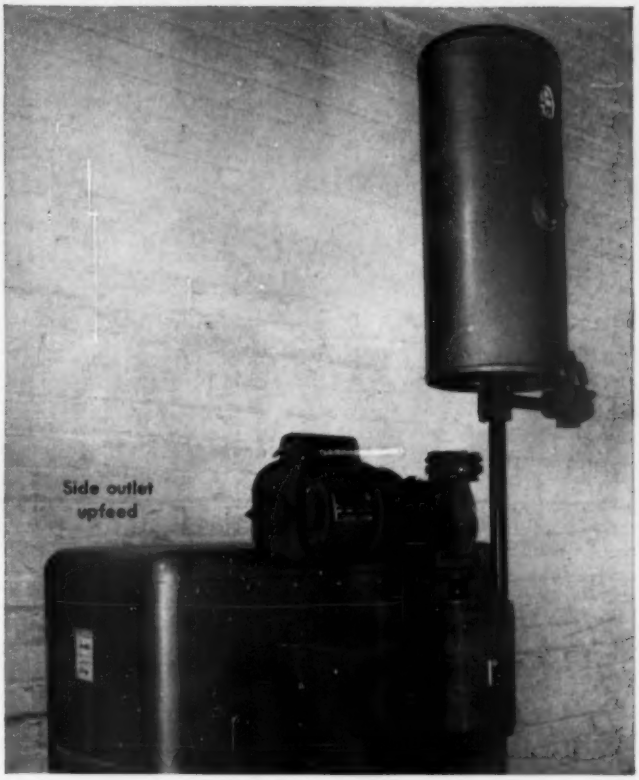
Made by: The Carlin Co., Wethersfield, Conn.

FOR HOT WATER HEAT



PRE-ENGINEERED FOR PROFIT





B&G® *Hydro-Flo*® PAK

CUTS BOILER PIPING TIME FROM HOURS TO MINUTES

The B&G *Hydro-Flo* Pak consists of a B&G Booster, famous for quiet operation... *guaranteed* B&G Airtrol System... choice of B&G Relief Valve or Flo-Control Valve or both... separately packed B&G Compression Tank. Pipe and fittings are also included, cut to exactly the proper lengths.

Why waste expensive time cutting and fitting boiler piping, assembling components, hanging the compression tank? Now you can do the job this *better, faster way!*

Here, neatly packaged, is all the auxiliary equipment for most residential hot water heating systems. Preplanned and pre-engineered to make a correct installation in an incredibly short time... gives you control of your labor costs because you know accurately the time required to pipe the boiler.

In the B&G *Hydro-Flo* Pak, the basic piping around the boiler is furnished, cut to exactly the right lengths for any type of installation—takes only minutes to install the various pieces of equipment. The Pak features the B&G Airtrol System—the only *guaranteed* method of removing air from a hot water system and keeping it out.

Ask your wholesaler today about the B&G *Hydro-Flo* Pak—discover how to cut installing time!

BELL & GOSSETT
COMPANY
Dept. GK-7, Morton Grove, Illinois

Canadian Licensee: S.A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ont.

CORVAN

LOADSIDE PICKUP

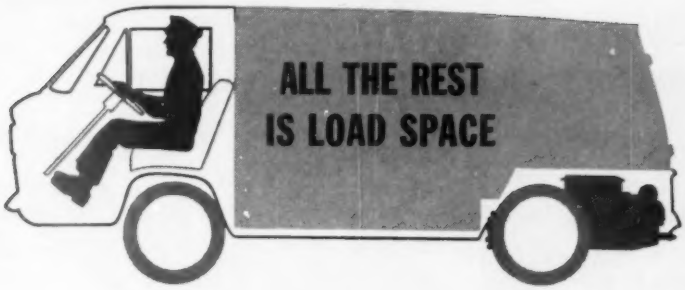
NEW FROM CHEVROLET

!!! WING-DING OF A TRUCK IDEA !!!

Here's a totally new kind of truck that gives you more load space than a conventional half-tonner, plus the inherent economy of an air-cooled engine! A truck that will carry up to 1,900 lbs. of payload (with a trim 4,600-lb. G.V.W.) on a nimble 95-inch wheelbase. A truck that measures only 15 feet long and devotes nearly 9 feet of it to payload! Dollar-saving performance starts with the engine—a space-saving "pancake" 6 that never needs anti-freeze or radiator repairs . . . and never stops saving fuel costs! Ideally suited for trouble-free truck duty, also, is the *tough* chassis build of Corvair 95, which includes frame and body designed as a rugged one-piece unit to

RAMPSIDE PICKUP

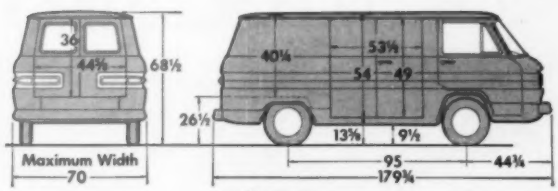
DRIVER'S UP FRONT . . . ENGINE'S IN THE REAR



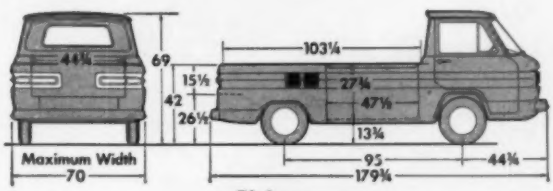
CORVAIR 95 ★★★★★ TRUCKS

withstand slam-bang runs. And there's *4-wheel independent suspension* (first time in a U.S. truck!) to take the roughness out of road surfaces. The list of Corvair 95 design advantages is as long as your arm. There's load space so accessible that the truck practically loads and unloads itself! There's exceptional driver comfort, easy maneuvering, snappy styling, and much, much more. It's a wing-ding of a truck idea—available in pickup and panel body versions. Visit your nearby Chevrolet dealer soon and get all the details. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

★★★



Corvan



Pickups

New Corvan. There's a world of load space in this new Chevy panel—it's 109″ long, 60″ wide and 54″ high at center! Side doors take a 4′ x 4′ crate with ease. Left side doors are optional at extra cost.

New Rampside pickup. Roll out those heavy loads—there's nothing to it in this one! Ruggedly built side gate drops down to form convenient ramp for *easy* loading or unloading.

New Loadside pickup. Gives you more load space than a conventional half-tonner. Also, optional extra cost *flat floor* provides 39 sq. ft. of loading area, and you can stow cargo underneath it, too.

Less truck weight allows more cargo weight! Corvair 95's weigh up to 1,200 lbs. less than other half-tonners . . . yet they'll carry up to 1,900 lbs. of cargo!

50-50 weight distribution! Husky 2,500-lb.-capacity front and rear suspensions carry nearly equal loads to reduce strain on chassis and tires.

More load space, less road space! Corvair 95's are 2 feet shorter than conventional half-tonners. But Corvair 95's carry bulkier cargoes!

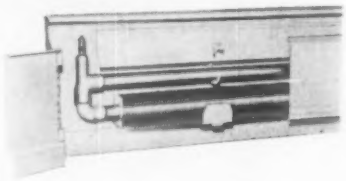
Easiest to get around in! Turning radius (under 20 feet) is less than that of ordinary trucks. That means easier maneuvering and parking.

1961 CHEVROLET STURDI-BILT TRUCKS

CHEVROLET

A. Brown Products has Baseboard with finger-tip control Damper

A MODERN, streamlined, unbroken-line baseboard with finger-tip control damper has been introduced by A. Brown Products Corp.



All components snap on and standard fittings are used throughout.

The Brown Bayce-Heet I-B-R approved and is rated at 600 Btu per linear foot at 180° F water, with 1 gpm flow.

Made by: A. Brown Products Corp., 1080 Springfield Rd., Union, N. J.

Accounta/Key System by Granberg is a self-service loading System

A SELF-SERVICE loading system that electrically transmits data into any type accounting system has been introduced by Granberg Corp. The driver inserts his key into his assigned slot and turns on the Granco Accounta/Key system. The key starts the pump and the meter records the loading data at two locations: the fueling site through the visible counter and electrically to the record panel in the locked control center.

Made by: Granberg Corp., Oakland, Calif.

the warmest way to the heart of a community

with ROUND OAK FURNACES

ROUND OAK Circulaire Furnaces Are Designed For Greater Comfort, Engineered For Bigger Profits!

You benefit two important ways by selling Round Oak Circulaire Furnaces. Round Oak Units are especially designed to provide the all-round comfort customers want. And satisfied customers mean more repeat business for you. The efficient components plus the extra heavy duty heat exchanger enables the Round Oak Furnace to capture and deliver more heat longer. In fact, this wrap around Versat-all heat exchanger is so durable it is guaranteed for life! This means total customer satisfaction. And, since Round Oak Furnaces are designed for quick, easy installation, you save on installation time which means more profits for you. Round Oak offers gas, oil and coal furnaces in all price ranges and sizes from 65,000 to 1,000,000 BTU and also offers the Clima Pump, the all new, all electric heat pump. Write today for all the facts. There's no obligation.

ROUND OAK COMPANY
DIVISION OF PEERLESS CORP.
DOWAGIAC, MICHIGAN
Manufacturers of quality Furnaces, Central Air Conditioning and Electric Clima-Pumps.

BOSTON-APTHORP OIL BURNER NOZZLES

Everything You Expect of a Nozzle!

1. Complete and perfect atomization.
2. Individually tested, BOSTON-APTHORP Nozzles deliver the correct gallonage, angle and type of spray, as marked.
3. Nozzle tip made of one-piece stainless steel, resulting in: (a) Uniform expansion and contraction. (b) Less heat conducted to the inside of nozzle than with brass, thus eliminating varnish build-up on inside vital parts. (c) Long life because stainless steel is tougher.
4. Fractional gallon sizes furnished standard with porous bronze filter.
5. Available in hollow and solid spray and standard angles of spray 30°, 45°, 60°, 70°, 80°, and 90°.

HOLLOW SPRAY

The hollow spray nozzle is designed for burners delivering a hollow air pattern. All of the atomized spray is delivered to the outside of the cone of spray.

SOLID SPRAY

The solid spray nozzle is designed for burners delivering a solid air pattern. The atomized oil is delivered equally throughout the entire cone of spray.

For details, write to:

BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Div.
7-17 WILLOW STREET
LYNN, MASSACHUSETTS

No matter what brand of heating oil you now handle...

MOBIL MEANS MORE CUSTOMERS!

because more people buy Mobilheat than any other brand!

. . . and because Mobilheat distributors are armed with special hard-selling marketing plans that meet specific needs, that work in their particular markets.

Right now, for instance, Mobilheat distributors are riding the crest of one of the most successful marketing programs in the heating oil business. It's Mobilheat's Automatic Personal Care plan—a good example of how Mobil gives its distributors what they need to bring in the business!

The *largest-selling product*, the *best-selling tools* and *management counsel* from Mobil will mean more customers for you as a Mobilheat distributor. If you are interested in handling the Mobil brand, contact the Mobil Oil Company office nearest you for more information.

America's Largest-Selling Heating Oil!

WHEN YOU TAKE ON THE MOBIL BRAND . . . YOU'RE ON YOUR WAY UP!

MOBIL OIL COMPANY, A Division of Socony Mobil Oil Company, Inc., 150 East 42nd Street, New York 17, N. Y.

AIR-EASE®

Gas fired BASEMENT UNITS
Hi-Boy Units
Counterflow units
HORIZONTAL units
Cooling units
Blower
Filter Units
OIL FIRED
choice of controls
enclosed controls
BELT DRIVE
QUIET!
QUIET!
QUIET!
completely assembled
AGA approved
compact
BELT DRIVE
DIRECT DRIVE

STOP DOODLING-
DO IT WITH AIR-EASE®

11-O

THE JOHNSON FURNACE COMPANY
2129 WEST 117th STREET, CLEVELAND 11, OHIO

Unit Ventilators for Schools introduced by Warren Webster

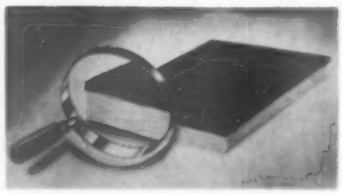
A NEW LINE of unit ventilators has been designed by Warren Webster & Co. especially for school installations. The equipment is offered in a range of five sizes from 500 cfm to 1600 cfm standard air.

The ventilator is engineered to be used with the Webster convector units and is integrated into a companion line of storage cabinets.

Made by: Warren Webster & Co., Inc., Camden, N. J.

Johns-Manville has fiber glass Liner for heating and airconditioning Ducts

MICRO-BAR is the new Johns-Manville fiber glass duct liner for airconditioning and heating duct systems. It comes in ½, 1, 1½ and 2-inch thicknesses, and is a resilient, semi-rigid insulation of glass fibers bonded by a thermosetting resin. The liner has been designed for resistance to the high air velocities of up to 5000 fpm.

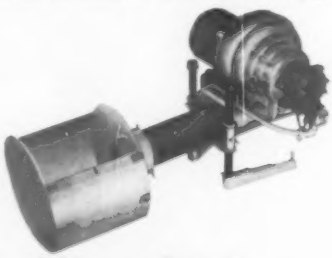


Noise from motors, fans, rushing air and other sounds are dissipated in the material's air spaces. Its thermal conductance is .25 at 75° mean temperature. Light in weight, "Micro-Bar" is easy to carry and store.

Made by: Johns-Manville, Industrial Insulations Division, 22 E. 40th St., New York 16, N. Y.

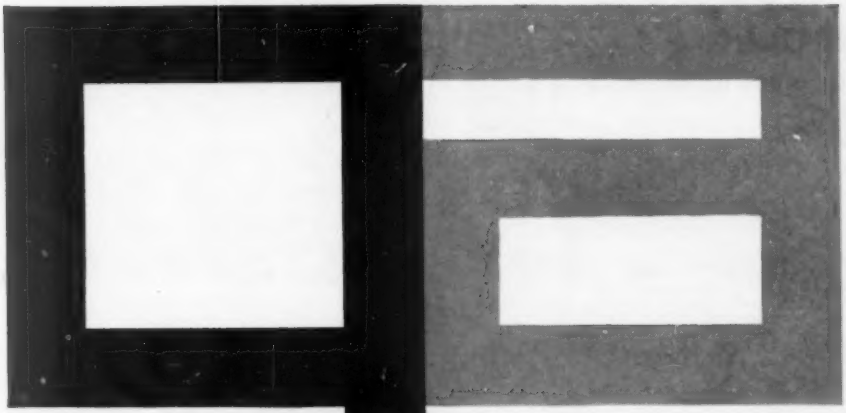
New Type burner combustion Chamber by Madsen Service is made of Steel

THE MADSEN "Quick-Temp" Combustor is a new oilburner combustion chamber. Made of steel, it is lined with high temperature ceramic fiber. The special design flange is part of the combustion chamber and slips over the end of the burner draft tube. Set screws on the flange are tightened for exact alignment.



The unit is available in two sizes: #1 for burners firing from .65 to .85 gph and #2 for firing rates of 1.0 and 1.25 gph.

Made by: Madsen Service, Inc., 3549 Nicollet Ave., Minneapolis 8, Minn.



Q—What's so good about being a branded heating oil distributor?

A— Plenty. When you're drumming-up new business, a strong, recognized brand helps you get your foot in the door.

Contrary to some beliefs, a brand and single source of supply put you in a more enviable position. You become more important to your supplier. Your business needs get closer attention.

Continued customer satisfaction is vital to you. With a single source of supply, you get consistent product quality, and you know *who* is responsible for it.

By building strong branded distributors, a supplier, of course, is broadening his market. So he sticks close. *You* get the benefit of *his* total brand marketing effort: better sales methods from his new business research; modern delivery techniques and facilities; advanced business training for your employees; consistent national and hard-hitting local advertising that sells your company and your name.

Q—Are these benefits automatic with being a branded distributor?

A—Not necessarily. It depends on the brand you go with.

For details, call or write our nearest Regional Office:
Philadelphia, Pa.
Pittsburgh, Pa.
Providence, R. I.
Syracuse, N. Y.
Charlotte, N. C.

ATLANTIC
HEATING OILS

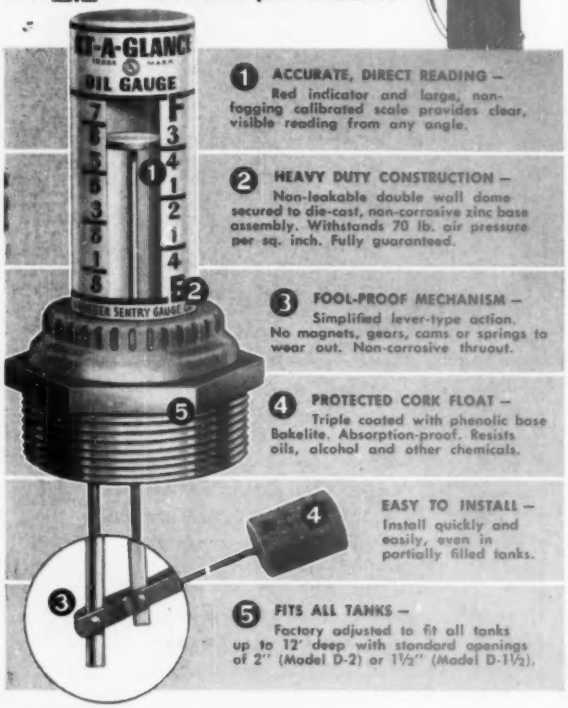
THE ATLANTIC REFINING COMPANY

Here's why *Sentry*

AT-A-GLANCE

TANK GAUGES

are tops in sales and performance



1 ACCURATE, DIRECT READING — Red indicator and large, non-fogging calibrated scale provides clear, visible reading from any angle.

2 HEAVY DUTY CONSTRUCTION — Non-leakable double wall dome secured to die-cast, non-corrosive zinc base assembly. Withstands 70 lb. air pressure per sq. inch. Fully guaranteed.

3 FOOL-PROOF MECHANISM — Simplified lever-type action. No magnets, gears, cams or springs to wear out. Non-corrosive thruout.

4 PROTECTED CORK FLOAT — Triple coated with phenolic base Bakelite. Absorption-proof. Resists oils, alcohol and other chemicals.

EASY TO INSTALL — Install quickly and easily, even in partially filled tanks.

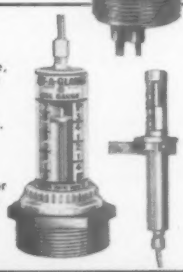
5 FITS ALL TANKS — Factory adjusted to fit all tanks up to 12' deep with standard openings of 2" (Model D-2) or 1½" (Model D-1½).

Fastest selling in the industry, Sentry AT-A-GLANCE gauges are recognized for their superior qualities of accurate measuring, clear visible reading, rugged but simplified construction and long-life durability. They are fully guaranteed and "listed as standard" by Underwriter's Laboratories. Complete Literature, Sales Brochures and Counter Displays available.

SENTRY Superior Quality THERMA-GAUGE

Similar to the standard AT-A-GLANCE gauge above, but features a solid red thermometer type indicator and a two-piece die cast plug-nut assembly which permits simplified tank insta. ion.

STOVE AND SPACE HEATER GAUGES
Several models with accurate, easy-to-read indicators to fit all tanks. Also models for small tanks such as power mowers and outboard motors.



REMOTE READING TANK GAUGES
Several models for outdoor reading of levels in tanks indoors, underground or at delivery fill pipe.

KRUEGER *Sentry* GAUGES
GREEN BAY • WISCONSIN

Universal Valve makes splash Deflector for Installation on underground Tanks

A SPLASH deflector specifically designed for the standard 3½" opening on underground storage tanks has been announced by Universal Valve. The anti-splash deflector is produced in a 3" size and is cadmium-plated iron or aluminum.

It prevents disturbing the sediment that exists at the tank bottom when the tank is being filled, yet allows maximum flow.

Made by: Universal Valve Co., Box 444, Elizabeth, N. J.

Cobra Metal Hose announces Line of copper hydronic Connectors

A NEW LINE of hydronic connectors and nipples made of copper has been announced by Cobra Metal Hose. Extremely flexible, they can be formed by hand to connect radiators, pipes, expansion tanks, etc.

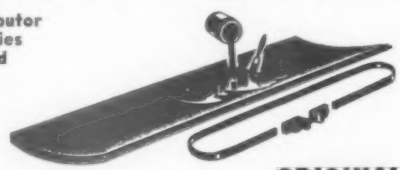
A blue line running the length of the flexible metal hose section identifies it as made for hydronic systems.

Made by: Cobra Metal Hose, Chicago 32, Ill.

5 YEAR GUARANTEE

backed by large New England Insurance Co.

Distributor Inquiries Invited



ORIGINAL STEEL

Permanent Tank Bottom

Seal leaking tanks the sure, positive way at a fraction of the cost of a new tank . . . and enjoy a 5 YEAR GUARANTEE of the entire tank! Only STEEL bottoms give certain seal with no chance of leaking or buckling. A one-man, 30-minute job. Insist on the ORIGINAL STEEL Permanent Tank Bottom now being used by over 800 oil and service companies. Three standard sizes . . . all 10" wide . . . in 60", 66" and 72" lengths. If no distributor of STEEL Permanent Tank Bottoms is in your area, order direct from factory—at discount . . . or write for literature.

PERMANENT TANK BOTTOM CO.
600 WYNDHURST AVE. BALTIMORE 10, MD.

It PAYS to remind your customers – GENERAL PRODUCTS IMPROVE HEATING!

Replacing General Filter Humidifier plate and filter cartridges can mean big business for you.

Let *General* products help keep your customers happy. You will be boosting your bank account when you do. Every heating plant needs *General* servicing at least once a year to maintain top-notch heating performance—its worth talking about—telling customers how important pre-season heating service is—with *General*, of course!

GF PRODUCTS

Ask your Jobber for these General Filters Products

GENERAL FILTERS, Inc.

43800 GRAND RIVER AVE. • NOVI, MICH.

IN CANADA: Canadian General Filters, Ltd., 39 Crockford Blvd., Scarborough, Ont.

General's **Moisture-Matic HUMIDIFIER**

Completely trouble-free. No float to stick. Corrosion free pan. Lifetime diaphragm.

Guaranteed one year on parts.

General **FILTER**

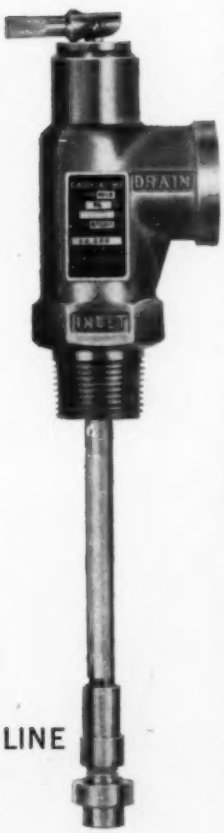
Lifetime cast iron and steel construction. Wool felt cartridges. Two sizes fit all plants.

General's **CLEAN RIGHT Soot Remover**

Instantly cleans flues and fire chambers in any kind of heating plant. Will not damage nozzles or parts. Cuts heating bills up to 25%.

TYPE **NFLX** SERIES

automatic reseating temperature and pressure relief valve



Another quality-first product in INDUSTRY'S WIDE, WIDE LINE OF AUTOMATIC VALVES

TOTALLY NEW.....

SETTING NEW STANDARDS OF SAFETY IN RESIDENTIAL WATER HEATER PROTECTION

Here's a relief valve engineered with a fresh outlook on hot water heater protection. The NFLX upgrades relief valve performance . . . raises safety margins in heater protection to approach instrument-like perfection.

Full ½" Seat Diameter: Assuring instant full relieving capacity.

Larger Flow-Ways: Precision cast valve body has larger flow-ways for maximum performance despite possible liming and scale accumulation.

Body Seat Elevated Above Drain Outlet: Prevents accumulation of solids around seating surface.

Newly Designed, More Powerful Thermostatic Element: Provides 35% more "push" for quicker more positive temperature relief. Solid-filled element has no liquids to leak . . . remains accurately sensitive for the life of the valve.

The NFLX fully meets all standards of FHA, AGA, requirements. Provides more than adequate protection as specified by ASA-1958 and FHA MPS-300.

A. W. CASH VALVE MFG. CORP.
666 E. Wabash Ave.
Decatur, Illinois

CASH AUTOMATIC VALVES ACME

Gulf Solar Heat Dealer has time to live a Sportsman's Life

ROMAN YANKOVIAK has lived in Cheboygan, Michigan all his life. He's been a Gulf Brand reseller for thirty-two of those years. Roman has good reasons for liking the way he lives. First, he enjoys the outdoor life in his spare time. With muskellunge, mallards, and much

other wild life practically camping on his doorstep, he doesn't have to travel very far to satisfy his love for fishing and hunting.

Second, he runs a thriving fuel oil business based on a lot of satisfied customers, sound promotion, and a fine product. "If I didn't think it was the best, I wouldn't be selling Solar Heat," says Roman. "Winters are long and get pretty rough up here, yet I can't remember a single instance when we ever traced any real trouble down to the fuel. As a matter of fact, the local burner people recommend Gulf Solar Heat so folks won't have any fuel-caused problems."

Customer satisfaction with clean burning Solar Heat is a big competitive *plus*. The virtual elimination of fuel-caused problems cuts down service calls. The fewer the service calls, the more time for fishing and hunting —the higher the profit. There's also plenty of Gulf supplied promotion material especially prepared to back up local selling efforts.

Phone or write your nearest Gulf Office .
They'll be happy to provide you with the full story on how you can take advantage of the many exclusive sales and promotional aids available through an association with the Gulf Solar Heat brand.

Roman, at right, and his hunting buddy, Clem Valot, take to the woods after Clem's well trained team of dogs. The eager pack of Beagles will track and flush out anything from a rabbit to a full grown deer.

Go one better—go Gulf

GULF
SOLAR HEAT
heating oil

Control for year-round Systems is now manufactured by Signet

SIGNET CONTROLS has introduced a thermostat sub-base for combination heating-cooling systems. The sub-base does not require the use of SPDT thermostats or separate time-delay relays. The series provides automatic control with single-pole, single-throw thermostats.

They have a built-in thermal relay which, with the system switch in the proper setting, will start the cooling system when the thermostat contacts open on a temperature rise and stop it when the contacts close on a temperature drop.

Made by: Signet Controls, Portland 2, Ore.

Service-Master Bodies redesigned to follow consumer Suggestions

CHANGES in exterior lines and compartments of the Service-Master body were made by McCabe-Powers Body Co. to follow suggestions from users throughout the nation. Standard features include: non-binding nylon door hinge bushings; fully-enclosed steel wheel housings; tread-plate steel cargo area; reinforced doors; safety catches on all doors and adjustable shelves and parts bin with hinged cover and removable bin dividers.

Available in sizes for old or new ½, ¾, 1 and 1½ ton chassis, regardless of make.

Made by: McCabe-Powers Body Co., 5900 N. Broadway, St. Louis 15, Mo.

Horizontal water Circulator added to Thrush's hydronic Specialties

A LOW COST horizontal water circulator has been added to the Thrush line. It is made in one model with four sizes of interchangeable flanges: ¾", 1", 1¼", and 1½" Rubber insulating sleeves at the flange bolts prevent metal-to-metal contact. There are no pump bearings to wear or couplings to replace.

Another Thrush new product is the air eliminator also made in four sizes. This one piece cast-iron unit has special cast-in deflectors located to direct air upward to the ½" vent connection. It has no moving parts.

Made by: H. A. Thrush & Co., Peru, Ind.

GOING-GOING-GONE
THEY SELL!
Klemm® MICRO
FUEL OIL FILTERS
KLEMM FUEL OIL FILTERS never stay long on your shelves. Good design and performance, attractive packaging and prices make them sure-fire best sellers . . . the kind that puts profit in your pocket.
Always stock KLEMM . . . they sell!
PK-150 U/L
JR-60
FF-430 U/L
FF-430G
SEND FOR complete literature and prices. Do it today.
Millions Since 1932
KLEMM PRODUCTS
Division of
KLEMM AUTOMOTIVE PRODUCTS COMPANY
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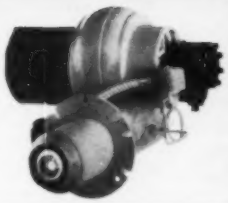
EXPORT: Guiterman Co., Inc., New York 4
CANADA: Elgee, Ltd., Toronto

MORE SALES . . . .
MORE PROFITS . . . .
MORE PRODUCT RELIABILITY
with . . .

KORTH

QUALITY EQUIPMENT

SHELL HEAD BURNERS

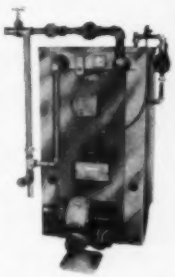


The new, improved Shell Head model KORTH burners are available in sizes and capacities from .75 through 20.0 gph. Universal, adjustable flange models—as pictured here—easily adapt to most boiler and furnace units both old and new. External air adjustments insure positive flame settings.

OIL FIRED WATER HEATERS

Two storage tank types: Glass Lined and Copper. Five sizes: 30, 45, 50, 65, and 70 Gal. tanks. Recovery rates from 120 to 180 gph. The only line of oil fired water heaters equipped with the new KORTH Shell Head burner for clean, efficient, and trouble-free performance.

WATER SUPPLY BOILERS



New! KORTH water supply boilers have been specifically designed for those big jobs such as laundromats, apartment buildings, restaurants, etc. Seven sizes to cover all water supply requirements from 300 to 3000 gph. All units are equipped with KORTH Shell Head burners, M-H controls, built-in high temperature combustion chamber, extra large tankless coils. Ten year guarantee on boiler against leaks. Constructed and rated to ASME and MCA standards.

WATER CONDITIONERS

A real opportunity for new sales! A natural tie-in to your present operation.

Model 51 automatic

Model 50 DeLuxe automatic

A complete line of simplified, service-free water softeners and filters to meet all water problems. Both semi and fully automatic models to choose from. Free water analysis and help in selecting the proper equipment. We'll be glad to send full details about this fabulous new market upon request.

SILENT KORTH OIL HEAT

REPRESENTATIVES AND DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE UNITED STATES

ECKHART MFG. CO. INC.
UNION, NEW JERSEY

ZONE-A-TROL

INDIVIDUAL ROOM TEMPERATURE CONTROL

FOR WARM AIR HEATING OR AIR CONDITIONING

ZONE-A-TROL
DAMPER ACTUATOR

INSTALLS 5 WAYS

LETS YOU CONTROL THE TEMPERATURE and your COMFORT IN EVERY ROOM

AUTOMATICALLY CONTROLS THE FLOW OF HEATING OR COOLING TO EACH ROOM OR ZONE

THE MODERN STANDARD OF INDOOR HEATING AND COOLING COMFORT

For more information, write

ECONO PRODUCTS COMPANY, INC.
Division of Viking Instruments, Inc. East Haddam, Connecticut

COMFORT CONTROL by Econo ZONE-A-TROL

A Complete Line of Zone Controls

For Every Heating and Cooling System

PRINTED FORMS AND OPERATION AIDS
For Immediate Shipment

Check items you are interested in. Attach to your letterhead, mail for information, prices, FREE SAMPLES:

☐ Degree Day Cards
☐ Service Order
☐ Service Ticket
☐ Service Record Card
☐ Daily Record of Deliveries
☐ Service Dept. Record
☐ Authorized Receipt
☐ Door Knob Notice Card *
☐ Telephone Call
☐ Inter-Office Correspondence
☐ EZE Stick Pressure Sensitive Label *
☐ Price Charts
☐ Weather Temp. Recording Thermometer
☐ Safety Sidewalk Caution Signs
☐ Sort-O-Matic Rack

☐ METERED ONE-TIME CARBON DELIVERY TICKETS (Truck—Bulk Plant—Gas Pump)

My Name.....
Company.....
Street.....
City.....State.....
*Allow 2 weeks to imprint your copy.

Serving 20,000 Petroleum Firms Over 30 Yrs
DEGREE DAY SYSTEMS
39-30F 58 ST., WOODSIDE 77, N. Y.

Calendar of Coming Events

NOVEMBER

4– 7—National Oil Jobbers Council, meeting, Congress Hotel, Chicago.

14–16—American Petroleum Institute, 40th annual meeting, Conrad Hilton, Palmer House, & Congress Hotels, Chicago.

14–16—National Warm Air Heating and Air Conditioning Association, 1960 convention, Statler-Hilton Hotel, Cleveland.

20–22—Fluid Contols Institute, fall meeting, Drake Hotel, Chicago.

27–30—Northamerican Heating and Air-conditioning Wholesalers Association, Fall Convention, Statler Hilton Hotel, Detroit.

28–Dec. 2—American Society of Mechanical Engineers, Power Show, Coliseum, New York City.

1961

JANUARY

18–19—Northwest Oil Jobbers Association, convention, Minneapolis.

FEBRUARY

13–16—American Society of Heating, Refrigerating & Air-Conditioning Engineers, International Heating & Air-Conditioning Exposition, International Amphitheatre, Chicago, Ill.

MARCH

6– 8—Canadian Air Conditioning & Heating Council, National Heating & Air Conditioning Show, Automotive Bldg., Exhibition Park, Toronto.

APRIL

23–26—Oil-Heat Institute, convention, Statler-Hilton Hotel, Washington, D. C.

27—Greater Philadelphia Fuel Conference, annual convention, Sheraton Hotel, Philadelphia.

Two Indiana Cities begin Silver Shield Activities

KOKOMO AND GARY, Ind., have named Silver Shield Action committees to begin the upgrading program of the National Warm Air Heating and Air Conditioning Association, Cleveland, Ohio.

Bud Small, Small's Heating and Plumbing Co., heads the Kokomo inquiry committee. Studying the program for the Gary group is a committee led by Charles H. Novatny, John Novatny and Son, and Glenn O. Nallinger, Apex Heating Shop, Inc. Serving with the Gary group will be Ralph J. Potesta, executive secretary of the Lake County Sheet Metal and Warm Air Heating Contractors Association.

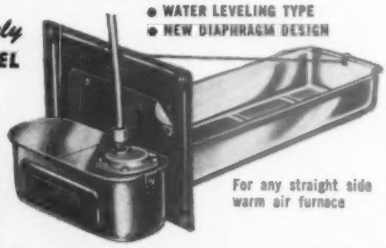
STAINLESS STEEL for Longer Life
Easier to Install for GREATER PROFIT

Vaporite HUMIDIFIERS

BACKED BY 35 YEARS OF MANUFACTURING KNOW-HOW

NEW Completely STAINLESS STEEL
MODEL 999
- New styling for greater sales appeal
- Engineered to avoid costly "callbacks"
- Tested and proved for long service
- Completely assembled for 30-minute installation

- WATER LEVELING TYPE
- NEW DIAPHRAGM DESIGN



For any straight side warm air furnace

THERMOSTAT CONTROLLED
MODELS 555C and 577
PROVED BY 20 YEARS USE IN MIDWEST

- STAINLESS STEEL VAPOR PAN — heats more quickly; vaporizes water faster
- AUTOMATIC DRIP-FEED VAPORIZATION — Thermostatically controlled

SERIES 555C

For any straight side warm air furnace

SERIES 577

For slanting or straight side warm air furnace

PRE-ASSEMBLED FOR 30-MINUTE INSTALLATION
WRITE FOR FREE LITERATURE

AUTOMATIC HUMIDIFIER CO.
CEDAR FALLS, IOWA

NOW! PORTABLE SOOTMASTER FURNACE CLEANER

Easily carried — Heavy duty performance — more economical—maximum filtration — maneuverable — New elastic top filter bag snaps on and off for easy cleaning

COMES COMPLETE WITH
- 10′ duck covered hose
- 27″ furnace cleaning tool
- 10 reusable paper filter bags
- Handy hose carrying cage
- Available without wheels

601-8

Distributed in Canada by: Imperial Refractories & Equipment Ltd.

mastercraft INDUSTRIES INC.

109 Lanza Avenue · Garfield, New Jersey

Three of Ripley Oil Company's eight Macks line up to take on fuel for delivery throughout the big rural area serviced from the Ripley, Ohio, headquarters. Customer service rates high where fuel oil deliveries are concerned. That means using the most dependable trucks you can get.

Dependable service

Starts with dependable trucks

"Dependable service makes old customers out of new, and our Mack trucks supply that dependability." That statement's from Mr. Richard Finney, president of Ripley Oil Co., Inc., of Ripley, Ohio.

Ripley Oil operates in rural areas where operating conditions are frequently unfavorable. Yet, over the years, Ripley's consistently dependable service has resulted in a steadily growing list of satisfied customers.

You can be sure your customers get dependable service if Mack trucks do the job. Here's why . . . a Mack truck is a quality vehicle. It is not just Mack-assembled—it's Mack-*built*. Mack manufactures its own engines, axles, transmissions, cabs, and other components. Every vital part is built by Mack for Mack trucks alone. Furthermore, fuel oil distributors find that Mack quality means balance-sheet savings in repairs, parts replacement, maintenance, fuel and downtime.

Your Mack branch or distributor will be glad to help you select the model best suited to your requirements. Mack Trucks, Inc., Plainfield, New Jersey. Mack Trucks of Canada, Ltd., Toronto, Ontario.

7378

MACK
for over 7 straight years
NO. 1
by far in sales of diesel trucks

MACK
FIRST NAME FOR
TRUCKS

Cool with Oil

(*Begins on page* 47)

stat does not cycle, start and stop, the oilburner.

As he helps out some of the other Florida oil companies which have installed Arkla units, willing to do this solely to cooperate with them and able to because of his wealth of heating-cooling experience, Kirkpatrick has had considerable experience with these units.

He has learned these points about servicing the oilfired Arklas are important: 1) The water pressure developed by the cooling-tower pump must be accurately adjusted by using the hand valve installed for this; 2) The gph firing rate must be correct—must not be appreciably too low or too high—it should be measured, using the Oil-O-Matic burner; 3) The air-handling rate, the cfm, of the circulating blower handling the duct air must be correct for the house requirements—must not be slightly too low or too high; 4) The Arkla unit must be installed strictly level, not tipped even slightly, as it has internal refrigerant bleed-offs that work by gravity; 5) An installation man starting the unit, or a serviceman attending it, should be ready to use thermometers in the way covered by the installation-service manual, which indictates a set of nine listed thermometers should be on hand for starting and servicing.

Kirkpatrick is the one Florida oil company man whom your reporter visited, who installed an Arkla year-round oilfired airconditioner in the home of a regular customer. That job has not been 100% troublefree; for one thing, Kirkpatrick's service department reports that it replaced the original oilburner with a new one, because the first burner gave the trouble of "drifting flame size" . . . they said the gph firing rate shifted by itself. When your reporter saw the installation, it seemed to be working perfectly.

How to get going

Kirkpatrick wound up saying, "The secret to get these oilfired Arklas going in Florida is for every, single, oil-company man to install one in his own home."

City Fuel Oil Company, with its main office in St. Petersburg, can say it is the largest, and oldest (47 years) fueloil company in Pinellas County. As it also says it aims to be the most progressive, naturally it took part in the group movement to check on the operation of Arkla oilfired units on actual installations; it installed a Model 750-FO for the year-round conditioning of its own, main offices.

This equipment is proudly demonstrated by E. B. "Joe" Porter, president of the company. George W. Stovall, president of Ace Fuel Oil Company, one of the most courteous and considerate men engaged in oil-company organization work in Florida, also takes an active interest in Joe Porter's installation.

This installation, though overloaded, is doing a good job in an uneventful way. An accompanying caption describes the unusual location for its cooling tower—inside a garage adjacent to the offices.

MAKE MORE,

get your name on the Door

You have four special advantages working for you when you take on a Sinclair Oil Heat franchise . . .

$ **Sinclair Heating Oil** is one of America's best-selling heating oils. Premium Quality at regular price, it contains an exclusive anti-rust ingredient. That means fewer service calls.

$ **An unusual sales training program** that helps bring you new customers.

$ **Ample storage facilities** assure you of quick, dependable service.

Team up with Sinclair Oil Heat for more profits. For details, write: Sinclair Refining Company, 600 Fifth Avenue, New York 20, New York.

Sinclair HEATING OIL

Sinclair HEATING OIL SuperFlame

Now... in each case of these famous

SOLDER SEAL

BOILER CHEMICALS ...a certificate

redeemable toward the purchase of these fine Elgin watches!

GOOD FOR 1 DEALER
CERTIFICATE
This certificate (packed into each case containing 12 Solder Seal Boiler Products) is redeemable toward the purchase of one 17-jewel Elgin men's or ladies' shock-resistant waterproof watch with expansion bracelet (Reg. List $69.50) as outlined below:
1 Certificate PLUS $19.00 or
2 Certificates PLUS 14.00 or
3 Certificates PLUS 9.00 or
4 Certificates PLUS 4.00 or
5 Certificates and watch is sent to you without charge.
EFFECTIVE AUG. 1, 1960—VOID AFTER MARCH 31, 1961
RADIATOR SPECIALTY COMPANY
CHARLOTTE, N

$69.50 Value, 17-Jewel

ELGIN

Men's or Ladies' Wristwatches with expansion band

FREE

OF EXTRA COST WITH ONLY 5 CERTIFICATES

These certificates are packed into every case of 12 **Powder** and **Liquid Boiler Solder Seal, Rust Raider** and **Boiler-Lax.** Redeemable at your local Solder Seal Wholesaler. If your wholesaler cannot supply you . . . write for name of your nearest supplier.

SOLDER SEAL

RADIATOR SPECIALTY COMPANY

CHARLOTTE, NORTH CAROLINA

fuel oil & oil heat

NFC oilheating Promotion under way in 78 Markets

THE FOLLOWING LISTING contains the name of the organization which conducts oilheating promotion in the designated area. The budget figures represent the approximate total investment for 1960 in the campaigns based on actual data for the first three quarters plus a fourth quarter estimate.

CONNECTICUT

The Better Home Heat Council of Greater Danbury, Inc.
Joseph Buzaid, President
Mutual Fuel Company
64 Elm Street
Danbury, Connecticut
Amount of Budget: $10,500

Better Home Heat Council, Inc.
E. C. Parmelee, Secy-Treas.
Consumers Petroleum
808 Post Road
Fairfield, Connecticut
Amount of Budget: $20,000

Oil Heat Association
Robert Lynch, Jr., Exec. Secy.
P. O. Box 344
Hartford 1, Connecticut
Amount of Budget: $39,000

Greater New Haven Better Home Heat Council, Inc.
LeRoy E. Emanuelson, Exec. Secy.
860 Shagbark Drive
P. O. Box 626
Orange, Connecticut
Amount of Budget: $24,500

Oil Heat Foundation of New London
M. H. Hendel, Secy.
771 Bank Street
New London, Connecticut
Amount of Budget: $3,600

Better Home Heat Council, Inc.
LeRoy Emanuelson, Exec. Secy.
860 Shagbark Drive
P. O. Box 626
Orange, Connecticut
Amount of Budget: $37,000

FLORIDA

Better Home Heat Council of Florida, Inc.
Mr. Reggie Moffat
L. A. Johnson Fuel Oil Company
P. O. Box 1947
Orlando, Florida
Amount of Budget (state-wide): $71,500

GEORGIA

Chatham County Fueloil Dealers Assn.
W. Hughes Smith, Pres.
P. O. Box 3216
Savannah, Georgia
Amount of Budget: $7,400

ILLINOIS

Oil Heat Council, Inc.
C. R. Jonswold
Wholesale Marketing Division
The Pure Oil Company
35 East Wacker Drive
Chicago, Illinois
Amount of Budget: $226,400

Heating Contractors & F. O. Distrs. Assn.
G. E. Rolinger, Secy-Treas.
P. O. Box 314
Freeport, Illinois
Amount of Budget: $2,400

Fox Valley Fuel Oil Council
A. J. Michels
Michels-Harral Coal Co.
226 Spring Street
Aurora, Illinois
Amount of Budget: $1,800

INDIANA

Oil Heat Institute of Northeastern Indiana
Roy W. Feigley, Exec. Secy.
316 Central Building
Fort Wayne, Indiana
Amount of Budget: $10,700

Refiner Members supporting the programs of NATIONAL FUELOIL COUNCIL

Atlantic Refining Co.
Berry Petroleum Co.
California Oil Co.
Cities Service Petroleum, Inc.
Delhi-Taylor Oil Corp.
Esso Standard Div., Humble Oil & Refining Co.
Gulf Oil Corp.
Mobil Oil Co.
Ohio Oil Co.— Aurora Gasoline Co.
Phillips Petroleum Co.
Shell Oil Co.
Sinclair Refining Co.
Standard Oil Co. (Indiana)
Sun Oil Co.
Tidewater Oil Co.

Oil Heat Association of Gary
William Allman
Dalton Corporation
1015 Massachusetts Street
Gary, Indiana
Amount of Budget: $23,600

Calumet Petroleum Association
Ralph V. Pettit, Pres.
2825 Highway Avenue
Highland, Indiana
Amount of Budget: $10,000

Oil Heat Institute of Indianapolis
F. W. Harper, Exec. Secy.
5231 Winthrop Avenue
Indianapolis 20, Indiana
Amount of Budget: $34,400

Michiana Oil Heat Institute
R. Wade Curtis, Exec. Secy.
2803 South Michigan Street
South Bend, Indiana
Amount of Budget: $24,700

IOWA

Oil Heat Institute of Iowa
Lyle W. Munson, Secy.
1114 Fleming Building
Des Moines, Iowa
Amount of Budget: $5,400

Black Hawk County Oil Institute
Robert A. Young, Secy-Treas.
Box 207
Waterloo, Iowa
Amount of Budget: $5,000

MARYLAND

Oil Heat Association of Maryland, Inc.
T. E. Carson, Exec. Secy.
213 East 25th Street
Baltimore 8, Maryland
Amount of Budget: $78,600

MASSACHUSETTS

Better Home Heat Council, Inc.
R. E. Cullen, Managing Director
43 Leon Street
Boston, Massachusetts
Amount of Budget: $406,500

Bristol-Norfolk Oil Dealers Assn.
Joseph Dwyer, Secy.
52 Eddy Street
Attleboro, Massachusetts
Amount of Budget: $7,400

Better Home Heat Council
K. H. Lyman, Exec. Secy.
278 Main Street
Greenfield, Massachusetts
Amount of Budget: $5,300

Berkshire Oil Heat Council
Albert Silverman, Secy.
Whitehall Building
31 Wendell Avenue
Pittsfield, Massachusetts
Amount of Budget: $10,000

THEY'RE **DEPENDABLE**

THAT'S WHY THOUSANDS OF

VIKING

TRUCK PUMPS HAVE BEEN INSTALLED THIS PAST YEAR FOR DELIVERY AND TRANSPORT SERVICE

Many Viking Truck Pumps have replaced other pumps. Many other Vikings have been installed on new trucks. You see, operators, who want good service for years plus full capacity to meet their needs, know they can depend upon Viking Truck Pumps.

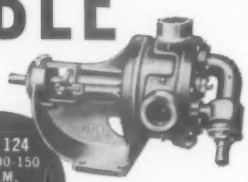


FIG. 124 35-50-90-150 G.P.M. Packed type pump shown with valve on head

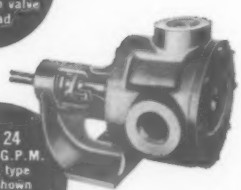


FIG. 24 200-300 G.P.M. Packed type pump shown with tapped ports

FIG. 424 200-300 G.P.M. Mechanical seal type pump shown with flanged ports

And with Viking Truck Pumps you also get . . .

- Fast, positive delivery
- Revolvable casing for handy port locations. 8 positions.
- Integral thrust bearing of sturdy construction.
- Extra long packing box or mechanical seal.
- Safety valve on pump head.
- Large mechanical seal type pumps equipped with aluminum brackets for lighter weight.

For complete information, write for catalog GEE

VIKING PUMP COMPANY

Cedar Falls, Iowa, U.S.A. In Canada, It's "ROTO-KING" Pumps
Offices and Distributors In Principal Cities • See Your Classified Telephone Directory

SEE A 2-WAY RADIO DEMONSTRATION

Your Motorola man will show you a nearby system in action

You'll see how radio-equipped vehicles in a business like yours can make *extra*, profit-producing calls by eliminating backtracking, "deadheading" and phoning-in.

You'll see how radio control of every vehicle gives your customers better service—gives you a competitive edge.

You'll see proof of decreased overtime—lower gas and oil bills—lower phone bills.

You'll get proof that Motorola 2-way radio can pay for itself in a short time—then go on to build your profits. Talk to the man who owns the system—ask him about Motorola dependability—Motorola service.

MAIL THIS COUPON TODAY!
NATURALLY THERE'S NO OBLIGATION

MOTOROLA
2-WAY RADIO

Motorola Communications & Electronics, Inc.
A Subsidiary of Motorola Inc., 4501 Augusta Blvd., Chicago 51, Illinois
Dept. FDH-106

☐ YES, I want a demonstration, have your man call me for an appointment.

NAME_____ TITLE_____

COMPANY NAME_____

TELEPHONE NUMBER_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

40 VALUE-PLUS MODELS FROM ½ TO 2 TONS

Bodies you can depend on—best built in the industry—with many "plus" features at no extra cost. Compare Morysville's wide selection feature by feature with *any* others. You're sure to find "More for your Money in Morysville".

HU SERIES
5 MODELS,
5 SIZES

HD SERIES - 5 MODELS, 5 SIZES

TH SERIES - 5 MODELS, 5 SIZES

MORYSVILLE Body Works INC.
BOYERTOWN, PA.

IMMEDIATE DELIVERY
WIDE RANGE OF OPTIONAL EQUIPMENT

National Distribution — Inquire today for the name of your nearest distributor

Write for FREE Literature

. . . . List of Promotional Campaigns

Oil Heat Council of Western Massachusetts
Keith F. Fletcher, Exec. Secy.
P. O. Box 1315
Springfield, Massachusetts
Amount of Budget: $16,700

MICHIGAN

Oil Heat Institute of Western Michigan
Harold M. Gast
Fuel Oil Department
Pyramid Oil Company
500 Paw Paw Avenue
Benton Harbor, Michigan
Amount of Budget: $15,900

Jackson Fueloil Council
William J. White
Sharkey Oil Company
P. O. Box 287
Jackson, Michigan
Amount of Budget: $3,100

Oil Heat Information Council, Inc.
Frank Fehsenfeld
Crystal Flash Petroleum Company
1754 Alpine, N.W.
Grand Rapids, Michigan
Amount of Budget: $20,700

Oakland Oil Heat Council
James R. Stelt, Secy.
42½ East Pike Street
Pontiac, Michigan
Amount of Budget: $40,900

Oil Heat Council of Met. Detroit
W. A. Guthrie, Div. Mgr. (Pres.)
Socony Mobil Oil Co.
903 W. Grand Blvd.
Detroit 32, Michigan
Amount of Budget: $83,200

(combined with)
Macomb County Fuel Oil Dlrs. Assn.
Edward D. Brown
Shores Oil Company
19933 Nine Mile Road
St. Clair Shores, Michigan

Central Michigan Oil Heat Council
Orion C. Brower, Secy.
P. O. Box 1302
Lansing, Michigan
Amount of Budget: $7,300

Greater Flint Oil Heat Council
J. E. Truesdell
1502 S. Dort Highway
Flint, Michigan
Amount of Budget: $14,500

Lenawee County Fuel Oil Council
R. M. Camburn
Camburn-McCord Oil Co.
600 Gulf Street
Adrian, Michigan
Amount of Budget: $4,500

Saginaw Fuel Oil Dealers Assn.
Fred C. Brown
Saginaw Central Oil Co.
1420 Court Street
Saginaw, Michigan
Amount of Budget: $4,300

MINNESOTA

Twin Ports Oil Men's Club
John Bero
John Bero Oil Company
3020 West Superior Street
Duluth, Minnesota
Amount of Budget: $12,500

Northwest Petroleum Association
H. F. Horning
84 South 6 Street
Minneapolis, Minnesota
Amount of Budget: $52,700

Tri-County Oil Heat Association
David E. Meagher, Pres.
Meagher Oil Company
301 East St. Germain
St. Cloud, Minnesota
Amount of Budget: $8,700

MISSOURI

Oil Heat Institute of St. Louis
George Koertel, Secy.
3917 Federer Place
St. Louis 16, Missouri
Amount of Budget: $33,100

NEW JERSEY

Oil Heat Council of New Jersey
Leslie R. Freeman, Administrator
1060 Broad Street
Newark 2, New Jersey
Amount of Budget (state-wide): $216,000

NEW YORK

Capital District Oil Heat Assn., Inc.
W. E. Davis, Managing Director
10 Terminal Street
Albany, New York
Amount of Budget: $9,100

Amsterdam Oil Dealers Association
Herbert Wilde, Secy-Treas.
35 West Main Street
Amsterdam, New York
Amount of Budget: $4,300

Southern Tier Petroleum Dealers Assn.
Alan Savory
Savory Oil Company
P. O. Box 267
Binghamton, New York
Amount of Budget: $6,700

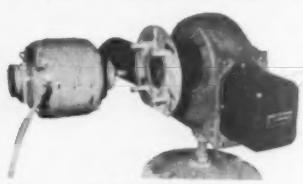
IT'S COLD!! THE MOTOR QUITS

No Spare in Truck or Shop
Now Servicemen Carry

MOTADAPTOR®

THE UNIVERSAL MOTOR MOUNTING FLANGE

AT YOUR JOBBER



FITS OLD OR NEW MOTORS

U. S. PAT. 2510680

TRADE MARK ®

J. B. PRODUCTS 79 Waydell St. Newark 5, N. J.

MADSEN Quik-Temp Combustor

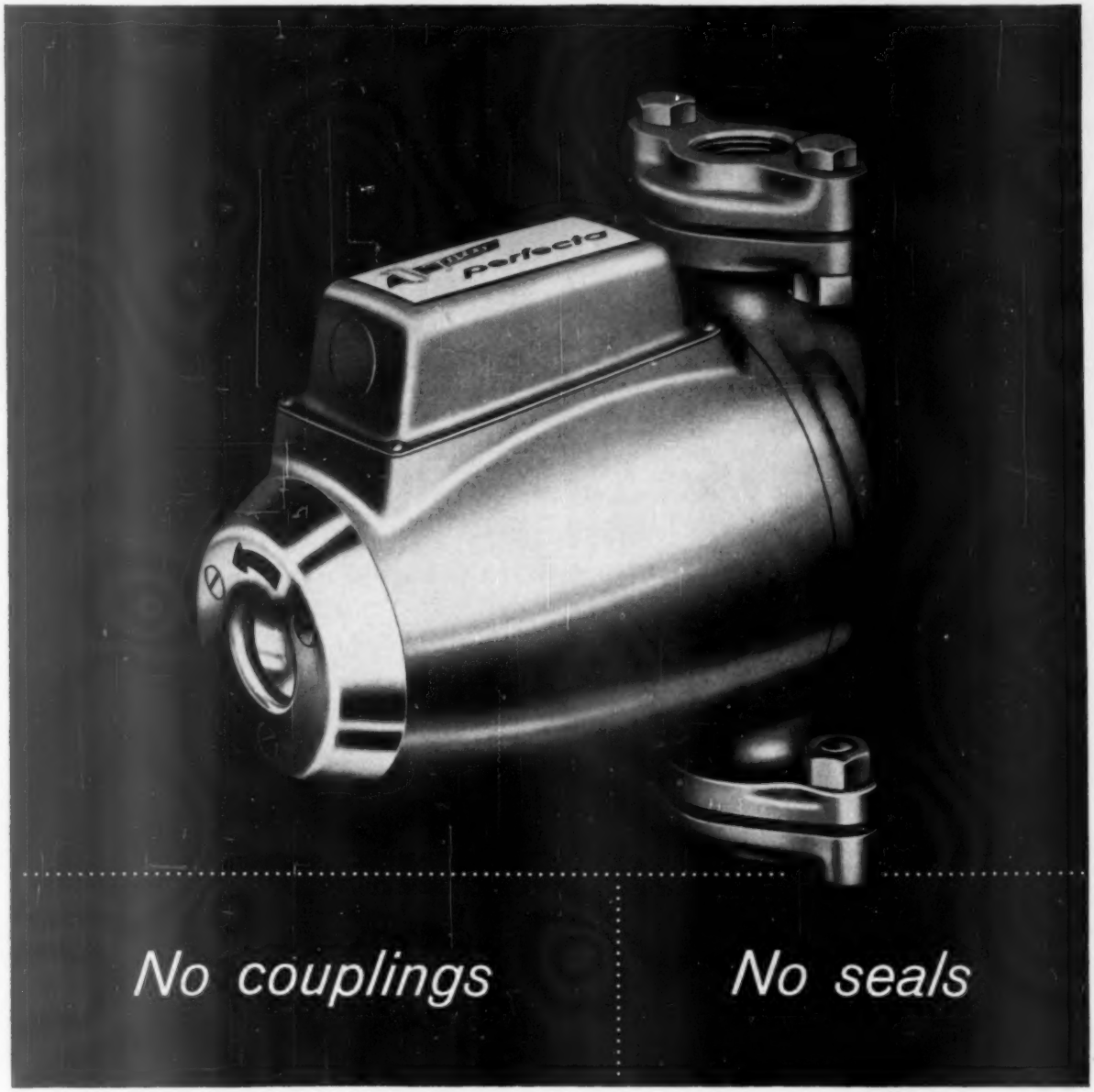
- The combustion chamber you've been waiting for.
- Saves approximately 4 hours installation time.
- Improves burner efficiency.

- Made of steel plus ceramic fiber.

Sizes available .65 to 1.25 gph

For Information and Literature, Write Today!

MADSEN, Inc. 3549 NICOLLET AVE. MINNEAPOLIS 8, MINN.



No lubrication worries!

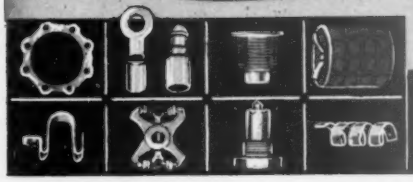
They're a thing of the past since the Perfecta Circulator came on the scene. It's the world's *first* successful *water-lubricated* circulator. Rotor and impeller are "unitized" on the same shaft and operate completely submerged in water. It's *impossible* for bearings to burn out. No danger of *over* lubrication either. And there's less friction than with conventional oil lubrication. You'll find similar troublefree features throughout the Perfecta: no seals to leak, wear, or create extra friction; no starting switch to develop trouble; no coupling to break or stretch — and many more. And the easy-to-install Perfecta has just three compact parts, motor housing, unitized rotor-and-impeller, and a body. It's the simple solution to *your* residential pump requirements. For specifications, write to TACO HEATERS, INCORPORATED, 1160 Cranston Street, Cranston 9, Rhode Island.

TACO

SERVING THE HYDRONIC INDUSTRY SINCE 1920

fuel oil & oilheat

Servicing Oil Burners ? YOU NEED THIS FREE Catalog



handy 20 page Catalog chock-full of popular REPLACEMENT PARTS and SERVICE TOOLS to make your servicing easier.

- FUEL UNIT PARTS
- CONTROL PARTS
- CIRCULATOR PARTS
- SHAFT SEALS
- STRAINERS
- GASKETS
- IGNITION TERMINALS

Your friendly Oil Burner Jobber stocks the HYDROVALVE Line.
Ask him for a copy of Catalog #60, or write direct.

Hydrovalve CO., INC.
1319 Utica Avenue, Brooklyn 3, N. Y. / BUckminster 4-1330

. . . . List of Promotional Campaigns

Oil Heat Institute of Buffalo, Inc.
Louis G. Meurer, III, Managing Director
641 Elmwood Avenue
Buffalo 22, New York
Amount of Budget: $43,700

Oil Heat Institute of Long Island, Inc.
George F. Byrne, Exec. Secy.
29 West Marie Street
Hicksville, L. I., New York
Amount of Budget: $230,200

Hudson Valley Fuel Oil Distributors Assn.
W. F. Carvell, Jr., Pres.
R. K. Ballard Company
274 East Strand
Kingston, New York
Amount of Budget: $8,800

Western Orange Oil Heat Council
Don Fischbeck, Pres.
P. O. Box 378
Middletown, New York
Amount of Budget: $4,000

Niagara Falls Oil Heat Association
Bernard Levy, Secy.
Oppenheim Building
1415-1417 Main Street
Niagara Falls, New York
Amount of Budget: $35,400

Eastern Orange County Fuel Oil Dealers
Al Rhoades, Exec. Secy.
9 Hilltop Drive
Newburgh, New York
Amount of Budget: $4,700

Better Heat with Oil Council, Inc.
Joseph Loveland, Exec. Dir.
1220 Broadway
New York 1, New York
Amount of Budget: $148,200

Dutchess County Fuel Oil Dealers Association
D. P. Love, Secy.
Love Oil Company
P. O. Box 8
Poughkeepsie, New York
Amount of Budget: $10,000

Oil Heat Institute of Rochester
Frank Cady, Managing Director
P. O. Box 903
Rochester, New York
Amount of Budget: $42,500

Oil Heat Institute of Westchester
Thomas P. Campbell, Exec. Secy.
6 Palmer Avenue
Scarsdale, New York
Amount of Budget: $45,500

Modern Oil Heat Institute of Northern New York
H. E. Martinet, Exec. Secy.
340 Winslow Street
Watertown, New York
Amount of Budget: $12,600

NORTH CAROLINA

North Carolina Oil Heat Council
Carl H. Harris, Pres.
Bull City Oil Company
1704 Newton Road
Durham, North Carolina
Amount of Budget: $22,535

HAYWARD
Rotary Atomizing Burners
¾ to 12 Gph
Boiler-Burner Units
400 to 730 Sq. Ft. EDR Steam
Pressure Atomizing Burners
¾ to 10 Gph
Boiler-Burner Units
200 to 2000 Sq. Ft. EDR Steam

Write for franchise information:
HAYWARD OIL BURNER CORP.
125 Winter Street, Taunton, Mass.
Branch Office:
86 Kirkland St., Cambridge, Mass.

THE HIDY DEGREE-DAY RECORDER WILL
SAVE YOU UP TO 30%
ON TRUCKING AND BOOKKEEPING COSTS

Would you pay $95 a year rental *to save up to 30% on your bookkeeping and trucking costs?* That's what hundreds of users of the HIDY degree-day system are saving every year. With this system you can deliver more gallons per mile—make fewer trucks do the same job. Can be bought or leased. In use in all parts of the country. The most accurate, easiest to install, simplest to maintain degree-day recorder on the market—and that statement is backed by $1000 reward for anyone who can prove otherwise! Write for full story of this money-saving, work-saving plan—ask for Bulletin FO-11. Please state whether you already operate on Degree Day system.

(Note: Some territories still available for sales representatives. Write for information.)

HIDY-BROWN RECORDER COMPANY
6988 FIVE MILE RD.
CINCINNATI 30, OHIO

McLARTY DRAFT BOOSTERS
Most Powerful in the Business. YET
ADJUSTABLE AND QUIET

Ventilated Plates
KEEP MOTOR COOL Enough for Rubber Mounting
No Special Oil Needed for Cool Enough Motor Bearings
Sizes 6",7",8",9",10"

McLARTY SYSTEMS
2550 Dickman Rd., Battle Creek, Michigan

RAJAH TERMINALS
FOR OIL BURNER SPARK PLUG IGNITION CONNECTIONS
Made in Two Styles
CRIMP TYPE and SOLDERLESS

Code No. C/T #11

Code No. S-SOS #11

THE RAJAH CO., 35 Verona Ave., Newark, N.J.

How fuel oil distributors build year-round profits with Shell "Certified Comfort"

Here are eight important benefits that help fuel oil distributors build year-round profits with "Certified Comfort":

Advertising—A full-scale cooperative advertising program makes use of television, radio, outdoor, newspapers and direct mail. Available to all Distributors of Shell Heating Oils upon request.

Distributor Marketing—Today, over 90% of Shell's domestic heating oils are sold through distributor organizations.

Training—Shell conducts local Workshop Conferences in distributor marketing areas.

Permanency—Shell offers various types of long-term distributor contracts which also provide renewal options.

Product Acceptance—Shell has top consumer-brand acceptance and is one of the country's largest national advertisers.

Competition—Shell's pricing policy to distributors is fair and competitive.

Research—Seven Shell research laboratories employ over 2000 technical experts who constantly work to improve and expand the Shell Product line.

Insurance—Shell offers its distributors the many benefits of a low-cost group life insurance program . . . up to $10,000.

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—and the nearest Shell office will be glad to show you why. Ask for the District Manager.

MODERN HEAT SHELL CERTIFIED COMFORT

fuel oil & oilheat

. . . . List of Promotional Campaigns

East Carolina Oil Heat Council
W. A. Hooks, Chairman
Box 450
Smithfield, North Carolina
Amount of Budget: $56,800

PENNSYLVANIA

Harrisburg Conference Oil Heat Association of Central Pennsylvania, Inc.
R. J. Selig, Secy.
1400 Herr Street
Harrisburg, Pennsylvania
Amount of Budget: $12,200

Lancaster Conference, Oil Heat Assn. of Central Pennsylvania
Frank B. Null, Jr., Secy.
911 N. President Avenue
Lancaster, Pennsylvania
Amount of Budget: $5,400

Oil Heat Council
E. E. Esterline, Exec. Secy.
Newton Building
53rd and Baltimore Avenue
Philadelphia 43, Pennsylvania
Amount of Budget: $102,300

Pennsylvania Oil Heat Council
Edward M. Pond, Exec. Secy.
c/o Lee Keeler Inc.
Fox Theatre Building
Philadelphia 3, Pennsylvania
Amount of Budget: $45,604
(combined with)
Chester County Fuel Oil Dlrs. Assn.
W. P. Canby, Jr., Secy-Treas.
Drawer J
Downington, Pennsylvania
North Penn Oil Dealers Assn.
A. J. Kissileff, Exec. Secy.
202 Plaza Building
Glenside, Pennsylvania
Delaware Valley Fuel Oil Dealers Association
Robert H. Kenderdine, Pres.
500 South State Street
Newton, Pennsylvania
Tri-County Fuel Dealers, Inc.
Milton E. Yohn, Secy-Treas.
166 W. High Street
Pottstown, Pennsylvania

Fuel Oil Dlrs. Assn. of Chester and Vicinity
James A. Moss, Secy.
P. O. Box 241
Chester, Pennsylvania

Berks County Oil Heat Institute
R. H. Witman
D. J. Witman Company
Pottsville Pike
Reading, Pennsylvania
Amount of Budget: $7,600

Modern Heat Council
W. R. Stout, Managing Director
R. D. 1
Wrightsville, Pennsylvania
Amount of Budget: $46,300

Oil Heat Association of Lycoming County
Walter J. Heim, Secy.
P. O. Box 340
Montoursville, Pennsylvania
Amount of Budget: $3,400

RHODE ISLAND

Home Heating Council of Rhode Island
Arthur J. DeBlois, Jr.
DeBlois Oil Company
Colfax Street
Pawtucket, Rhode Island
Amount of Budget: $77,100

Better Home Heat Council of North Rhode Island
Eugene A. Mailloux, Secy-Treas.
100 Main Street
Slatersville, Rhode Island
Amount of Budget: $6,900

SOUTH CAROLINA

Greater Columbia Fuel Oil Dlrs. Assn.
J. P. Rast, Pres.
Capital Fuel & Supply Company
2009 Green Street
Columbia, South Carolina
Amount of Budget: $10,400

Greenville County Fuel Oil Dealers Association, Inc.
R. C. Redd, Pres.
P. O. Box 955
Greenville, South Carolina
Amount of Budget: $12,100

Spartanburg County Fuel Oil Dlrs. Assn.
Mark Caldwell, Pres.
c/o Home Fuel Company
Fairforest, S. C., Amount of Budget: $6,300

York County Fuel Oil Dealers Assn.
J. W. White, Pres.
c/o White Oil Company
Rock Hill, S. C., Amount of Budget: $3,300

VIRGINIA

Danville Oil Heat Association
Frank T. Grogan, Jr., Pres.
221 River Street
Danville, Virginia
Amount of Budget: $2,000

Fredericksburg Fuel Oil Dealers Assn.
Dexter Hubbard, Secy-Treas.
P. O. Box 693
Fredericksburg, Virginia
Amount of Budget: $4,200

Tidewater Oil Heat Association, Inc.
Thomas S. Ellis, Exec. Vice-Pres.
5000 Colley Avenue
Norfolk 8, Virginia
Amount of Budget: $33,300

Richmond Oil Heat Association
E. D. Catterton, Secy.
515 West Grace Street
Richmond, Virginia
Amount of Budget: $13,700

Roanoke Valley Oil Heat Assn., Inc.
John J. Butler, Pres.
Andrews, Pitzer, Butler, Inc.
326 Albemarle Avenue
Roanoke 13, Virginia
Amount of Budget: $8,300

WASHINGTON, D. C.

Oil Heat Institute of Greater Washington
Graham Shields, Exec. Secy.
1507 "M" Street, N.W.
Washington 5, D. C.
Amount of Budget: $29,500

WISCONSIN

Wisconsin Petroleum Association
K. C. King, Exec. Secy.
318 Tenney Building
Madison 3, Wisconsin
Amount of Budget (state-wide): $61,500

HOT off the press is Cromwell Printery's 48-page 1960-61 Catalog of top quality Business Forms for fuel oil dealers. It's the dealer's best single source for every printing need, from Meter Tickets to complete Fuel Oil Budget Plan Packages. Every item is pictured and described with quantity price list.

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CITY ..... STATE .....

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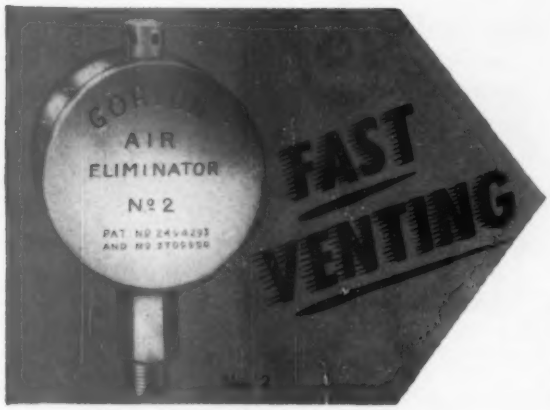

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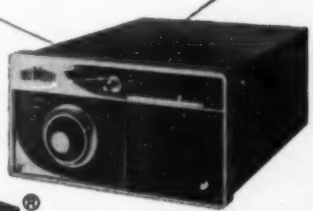

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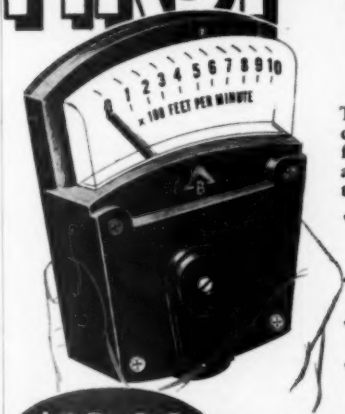

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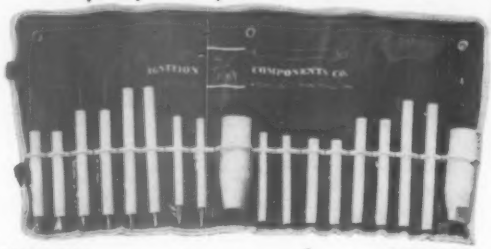

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TRUCK FOR SALE—1951 Ford, cab over, all automatic equipment, 1500 Gal. tanker, fairly good condition. Price-$1,000.00. Call for appointment—HO 2-0080—Freehold, N. J.

UNUSUAL OPPORTUNITY for two salesmen to be responsible for sale of Jet-Heet and Jet-Cool equipment. Must live in New England or be willing to relocate. The men we seek can expect to earn $8,000-$10,000 in the very first year and enjoy fringe benefits too. They must be interested in challenge and growth; they are not order takers but creative oilheating specialists. Present sales employment not essential but genuine desire for success in sales is vital. Write Sales Manager, Jet-Heet, Inc., 152 S. Van Brunt St., Englewood, N. J.

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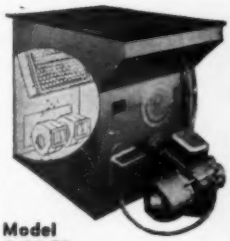

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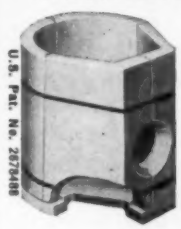

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Truck Talk

by Chet Cunningham

NOW IS THE TIME to start Winterizing those fueloil trucks!

You know how important that cooling system is, and in the winter it has a bigger job—because natural conditions make it tougher to operate normally. So make these checks on the cooling system:

- Drain radiator, block, heater and other system components.
- Flush and clean if needed. Remove thermostat before flushing.
- Check for bad radiator cap, hoses, gaskets, thermostat, drain cocks, plugs, fanbelt, fan and water pump.
- Determine antifreeze protection needed for your area. Add needed antifreeze of the permanent type, then fill radiator half full of water.
- Blow out the radiator fins with your air hose. Check the system for leaks after warming up the engine and while engine is running. Add water to bring coolant level to one inch of the filler neck bottom.
- Check protection with hydrometer after engine is warm.
- Always use permanent type antifreeze. Permanent, of course, means only that it won't boil away. Rust inhibitors in it break down after one year's use and the solution becomes contaminated with scale, flaking and mineral deposits. It will be less expensive in the long run to buy new permanent antifreeze.

Just buy a new truck? The correct operation of a new truck for the first few hundred miles will mean longer life and add much to its future performance economy. Chevrolet makes these suggestions in its 1960 truck operator's manual:

- Maximum speed—50 miles per hour for first 500 miles.
- Use lowest gear ratio available when starting up with a heavy load and climbing grades to avoid overtaxing the engine.
- Avoid driving too long at any one constant speed, either too slow or too fast.
- Avoid full throttle starts, and severe application of brakes.
- No continuous high speed driving until after 2,000 miles.
- Drive at reasonable lower speeds until engine warms up.
- Hill and mountain driving require more gasoline. A carburetor adjusted for sea level is very wasteful at 5,000 feet altitude.
- Tune up the engine regularly to correct gradually developing power-robbing features. Faulty plugs, for instance, can waste as much as a gallon of gas for every ten you burn.
- Use only highest quality fuel. Poor quality gas, whether regular or premium, may introduce harmful deposits into engine.
- Use a good grade of proper viscosity engine oil. Too heavy an oil wastes gasoline.
- Clean and re-oil or replace the air cleaner according to the recommendations. A dirty air cleaner can cut mileage by 10%.
- Balance front wheel and tire assemblies periodically to provide better ride, prevent fast tire wear.

Follow these suggestions from Chevrolet when you break in a new truck. They apply equally as well to any make of truck. These suggestions will help assure the proper mating-in of all the running surfaces and moving parts, and will mean longer, better operation.

Ask a dozen different truck drivers what "defensive driving means, and you'll get a dozen answers. Like: "Drive like everyone else is crazy." "Defensive driving means being alert and careful at all times." What's yours?

Remember back when "wrecks" were "accidents," and they were blamed on bad luck? Now we call them wrecks, and establish the legal cause for each one. But moving forward a step further, we are developing the "defensive driving" attitude idea among truckers.

The driver with a defensive driving attitude realizes that skill and observance of traffic regulations aren't always enough to keep him out of accidents. There's the *other driver* to be considered, who may not know or care about driving correctly.

The defensive driver adopts the attitude that almost all accidents can be prevented. It gives him a positive outlook, teaches him to keep the control of traffic situations in his own hands.

This is true whether you drive on city streets, super highways or across some logging road or construction project. A driver must learn that "recognition," "understanding," and "knowledge" are very important to him.

He must recognize adverse conditions that affect his driving. He must understand how they affect the control and safety of his vehicle. And he must know how to overcome them. With these three key words put into practice, defensive driving becomes second nature.

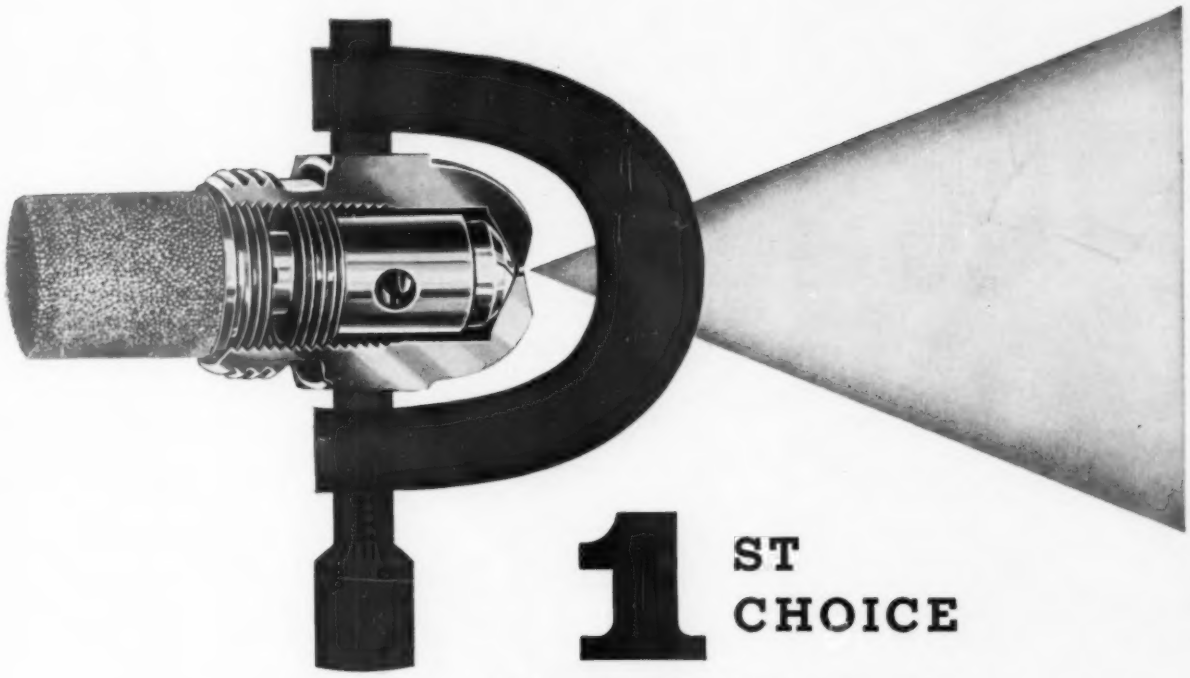
Here are some of these adverse conditions we must guard against: the acts of others, conditions of streets and highways, weather conditions, the condition of our vehicle and other vehicles, times, and even our own driving, physical and equipment deficiencies. Remember, when you're on the road—Drive Defensively!

Are your losing needed horsepower because your fan belts are too tight on some of your trucks? On the other hand a fan belt that is too loose will cost you generator and water pump efficiency. Test your belts to be sure they are right.

There's a new product out to do this job. It's called Borrough's belt tension dial gauge. Takes only seconds to slip it on and check the tension on your belts. It eliminates all guess-work, and it will work on any belt.

There's a new voltage regulator that is completely transistorized. There are no moving parts or contacts to wear or break down. It is designed for use on constant speed alternators —singly or in parallel. It's rated to 480 volts, 50-60 cycles.

The makers claim instantaneous response action to correct voltage fluctuations. Sensitivity range is plus or minus 1%.



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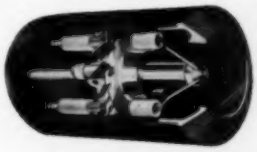
WHAT DOES MONARCH PRECISION MEAN TO YOU? EXTRA PROFIT on service contracts! Precision-made, precision-firing Monarch Nozzles eliminate excessive costs on call-backs due to faulty nozzles.

EXTRA ECONOMY! Eliminate trial and error with Monarch Nozzles. You can depend on them for uniform fires . . . and continuing proper performance even after long use.

EXTRA SATISFACTION! You have the double-satisfaction of a more profitable service operation, and customers with full confidence in *you!*

ALWAYS INSIST ON MONARCH PRECISION NOZZLES!



AIR MIXING EQUIPMENT

COMBUSTION HEADS:
G-81-C Head is as easy to install as an ordinary Air Cone and Stabilizer. Produces high CO_2 with no "adjustments" to get out of order. For 3⅞" or 4" I. D. Air Tubes.

CONVENTIONAL:
Bladed Cone Rings and four blade Stabilizers for ordinary Air Tube replacement from 3½" to 8" I. D. Also special "Anti-Pulsation" equipment.

Also available: Flame Mirrors, "24" and "48" Nozzle Boxes, Racks, Wrenches, etc.

DEALERS: Buy from your Monarch Jobber. Write for Catalog "O"

Monarch
MANUFACTURING WORKS, Inc.
2503 E. ONTARIO ST., PHILADELPHIA 34, PA.
Canadian Agent: (Except B. C.)
E. S. Gallagher Sales Ltd., Toronto 15, Canada
Exclusive Agents in all of Europe, Great Britain, Australia and New Zealand

REMEMBER: It costs more to clean a nozzle than to replace with a new, precision, guaranteed-uniform Monarch Nozzle.

Out of water; out of business!

That goes for boilers too—both steam boilers and hot water boilers. Everyone in the heating business knows this, but our problem and your problem is to make the boiler owner *equally* conscious of it.

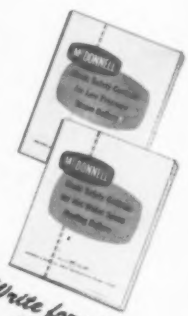
It's a job that's far from completed. There's still a lot of work to be done in the places where "out of water" literally means "out of business"—places like

Hotels	Laundries	Bakeries
Motels	Dry Cleaners	Schools
Apartments	Filling Stations	Stores
Greenhouses	Office Buildings	Churches
Theatres	Bottling Plants	Garages

Boiler owners and operators know how important it is to keep boilers, tanks and heaters operating. But they may not realize how important a role the right boiler controls can play in bringing this about.

To help you explain the what-why-how of Basic Safety Controls we have compiled these two companion booklets—one on steam controls and one on hot water controls. They are complete, but simple; contain all the reasons, all the conditions, in A-B-C form that anyone can understand.

Why not put them to work for you. Just write and ask for the "Basic Safety Control booklets."

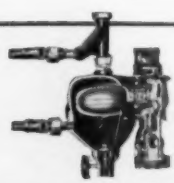


Write for these booklets

McDonnell & Miller, Inc., 3500 N. Spaulding Ave., Chicago 18, Ill.

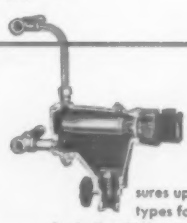
Doing One Thing Well

SAFETY CONTROLS REG. U. S. PAT. OFF.

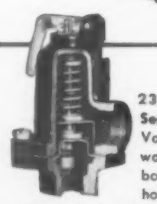


No. 47-2 Feeder and Cut-off Combination—for most automatically fired heating boilers operating at pressures up to 25 psi. Other types for larger boilers, higher pressures.

No. 150 Pump Control, Cut-off and Alarm Switch—for boilers up to 150 psi. Also available with integral water column (No. 157). Other types for pressures up to 250 psi.



No. 67 Low Water Cut-off—for all steam boilers with pressures up to 20 psi. Other types for hot water heating boilers, higher operating pressures.



230 Series & 240 Series Pressure Relief Valves—for hot water space heating boilers, and domestic hot water tanks and heaters. Comply with ASME Boiler Code. Btu.-rated by National Board.

McDONNELL *Boiler Water Level Controls*